

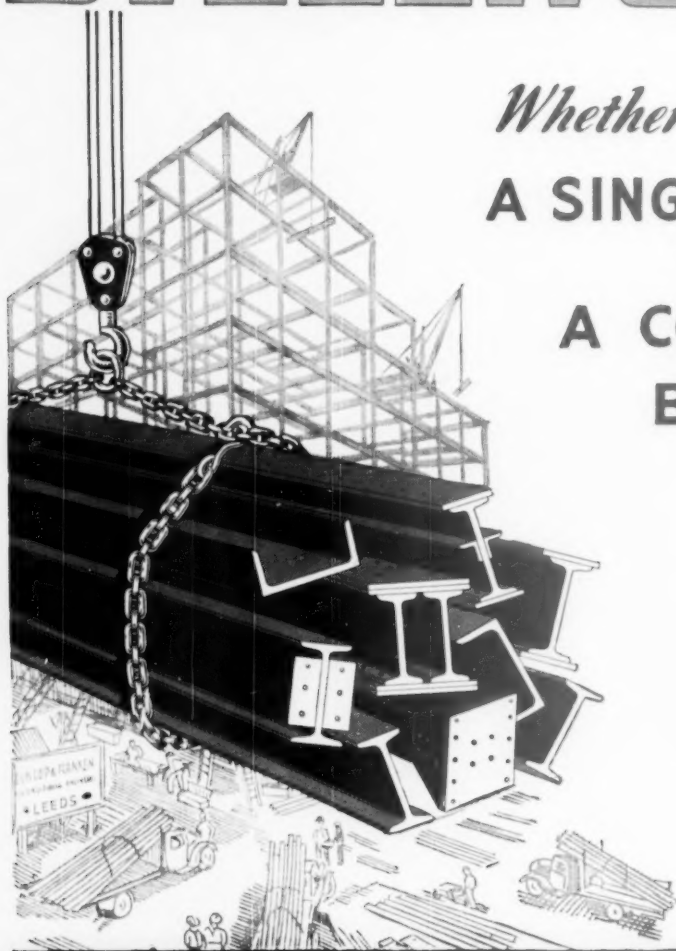
THE  
ARCHITECT  
& BUILDING NEWS

*In this issue*

- LIDO IN VIENNA
- GLASSHOUSE INSTALLATION, BAYFORDBURY
- LEEDS BUILDING WEEK

SEPTEMBER 8, 1950 • VOL 198 • NO 4264 • ONE SHILLING WEEKLY

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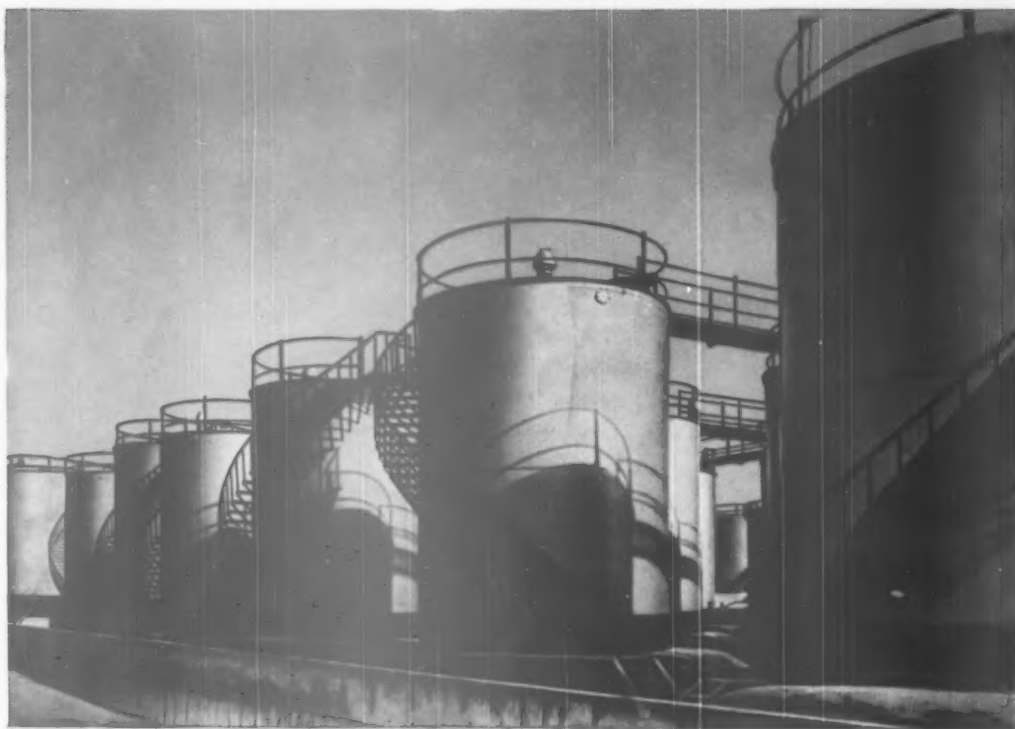
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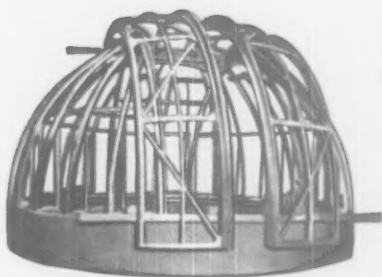
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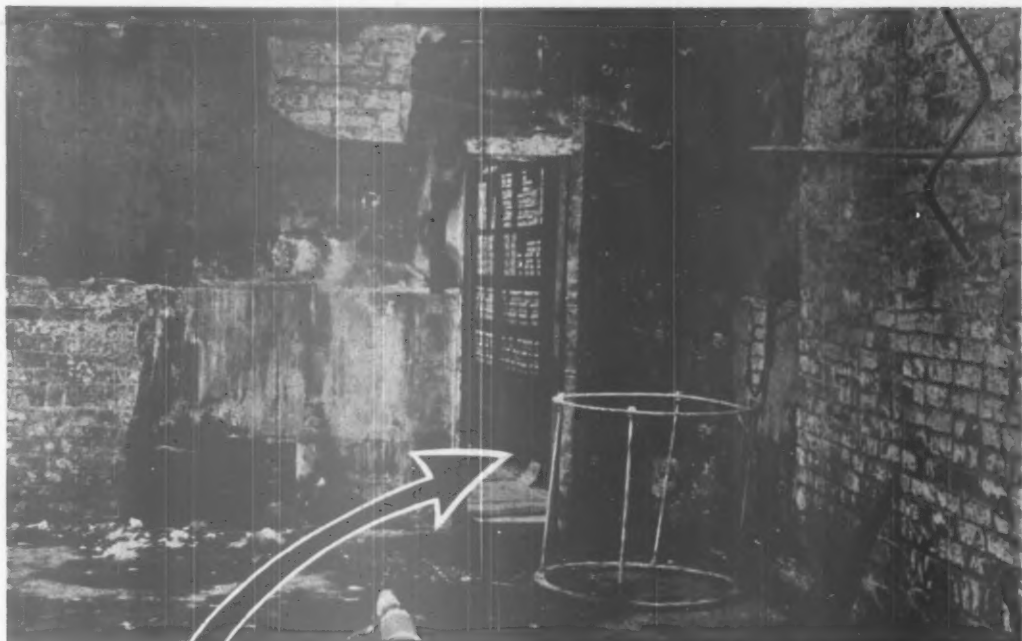
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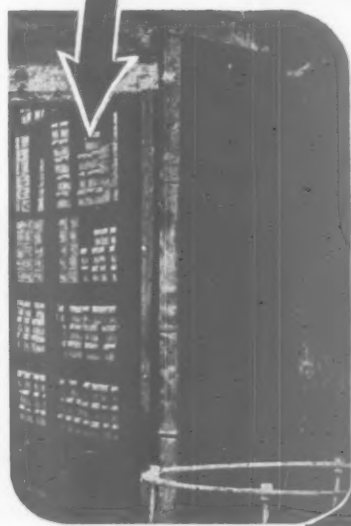
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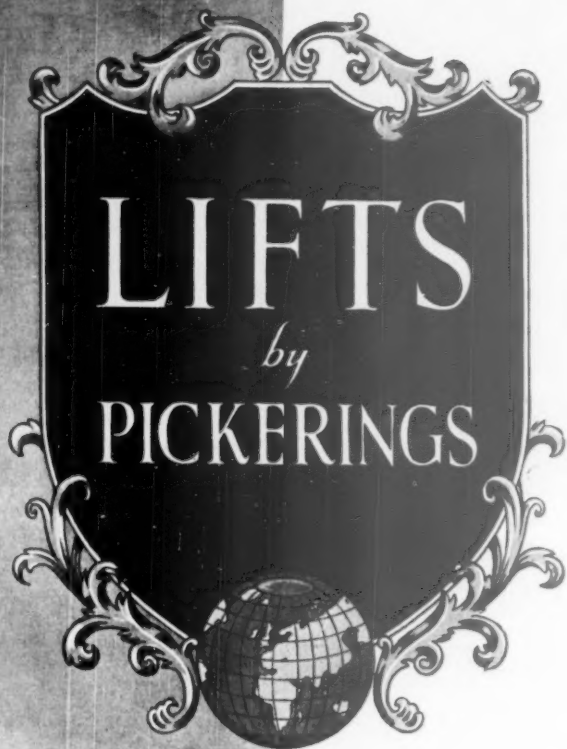


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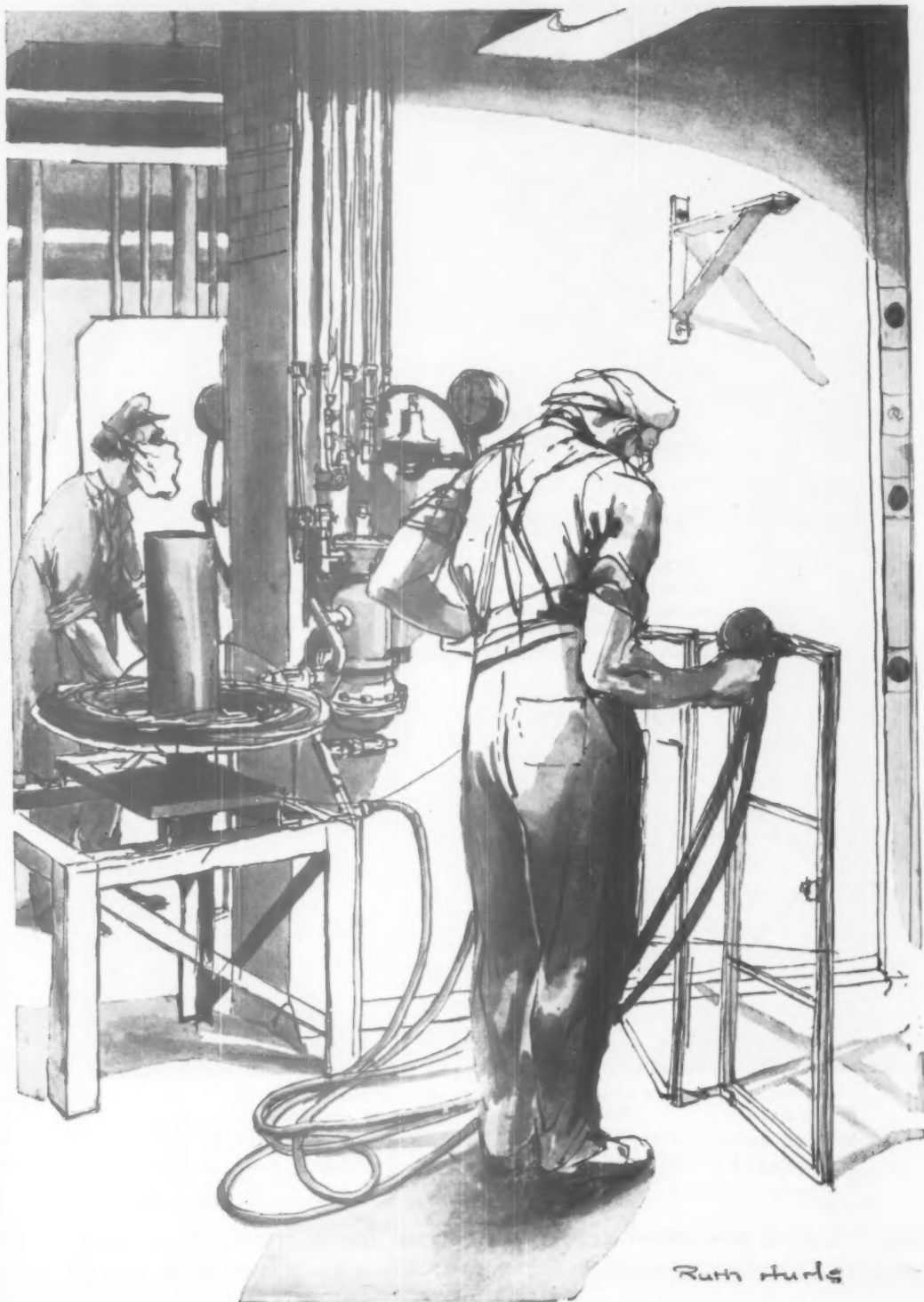
*This drawing of zinc sprayers at work in Reliance works, Chester, was drawn by Miss Ruth Hurie and forms part of a series "Window Makers at Work" by artists commissioned by Williams & Williams Ltd.*

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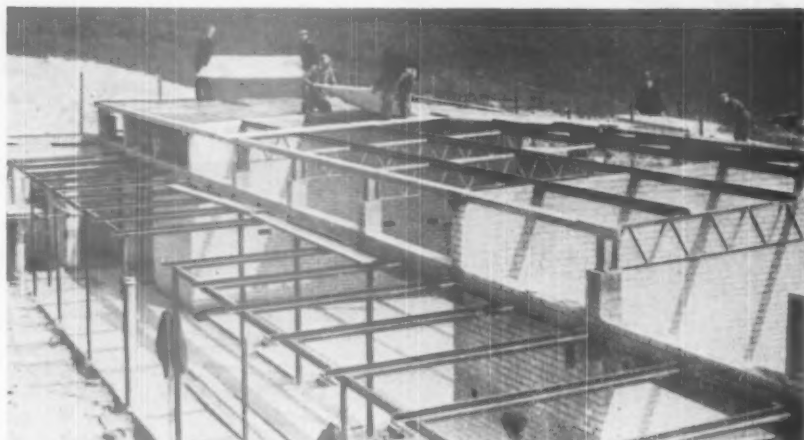
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## STRAMIT DECKING



This photograph shows STRAMIT roofing slabs (4' 0" x 8' 3") being laid to form a decking for bituminous felt at Elaine Avenue Primary School, Strood, Kent. (Architects: Messrs. Moiret & Wood, A.R.I.B.A., London in collaboration with S. H. Loweth, Esq., F.S.A., F.R.I.B.A., County Architect. Roofing Contractors: Neuchatel Asphalte Co., Ltd., London. General Contractors: Kent & Sussex Contractors, Ltd., Sidcup, Kent. Special purlins to the registered design of Messrs. Moiret & Wood).

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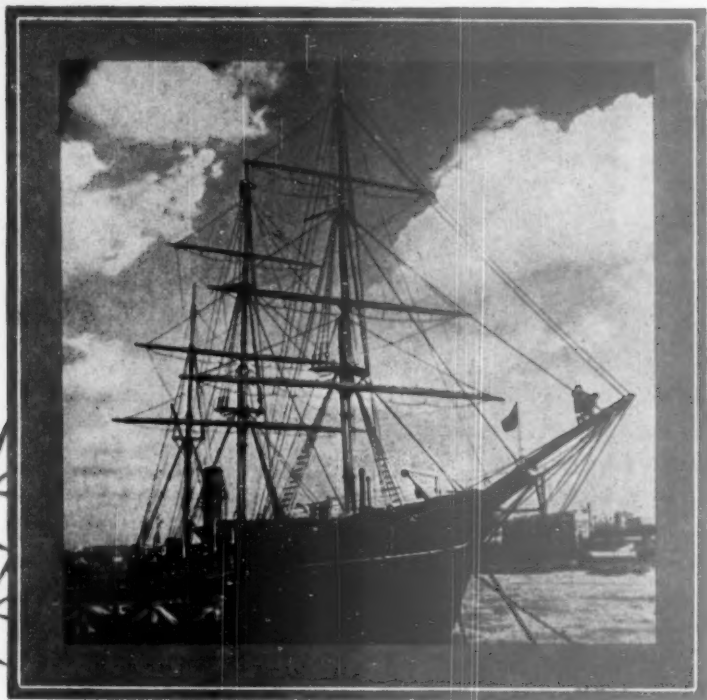
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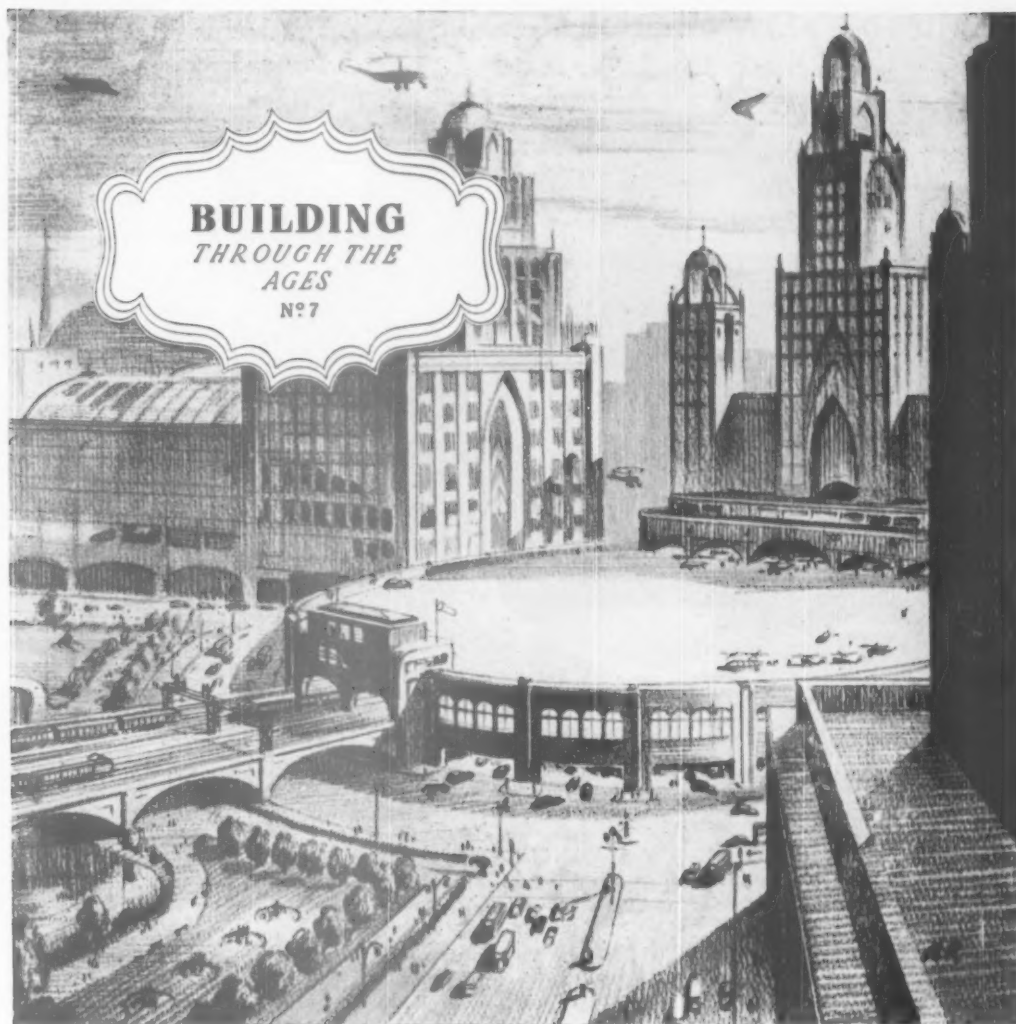
Being a maritime people it is natural that the names of famous ships should resound throughout the pages of our history. We rejoice in them as being emblematic of countless gallant and self-sacrificing deeds. Such a name is "Discovery", forever linked with the memory of Captain Robert Falcon Scott, the renowned Antarctic explorer and his courageous associates. R.R.S. "Discovery", now moored off Pilgrim Pier, Victoria Embankment, London, serves as their most fitting memorial. She is owned by the Boy Scouts Association, and is used as a training ship for Sea Scouts, and also as a hostel for Scouts from all over the world; thus providing a constant inspiration to Youth.



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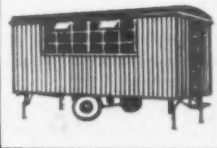
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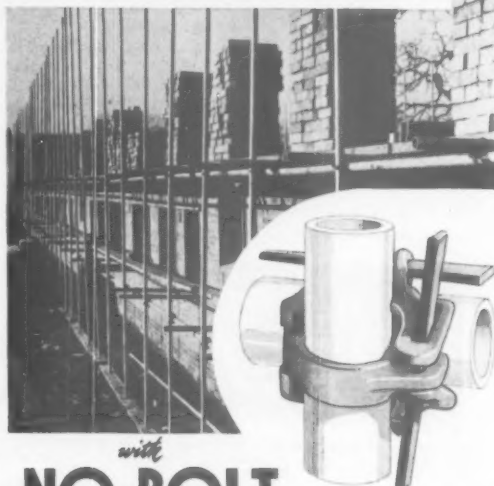
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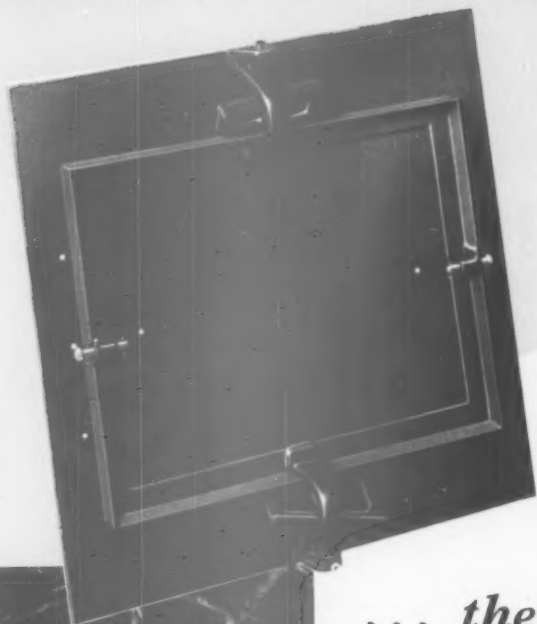
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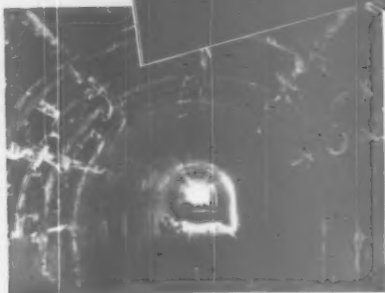


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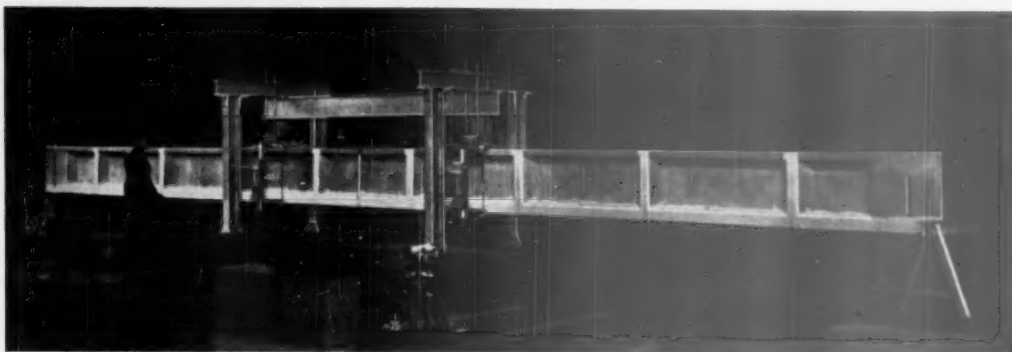
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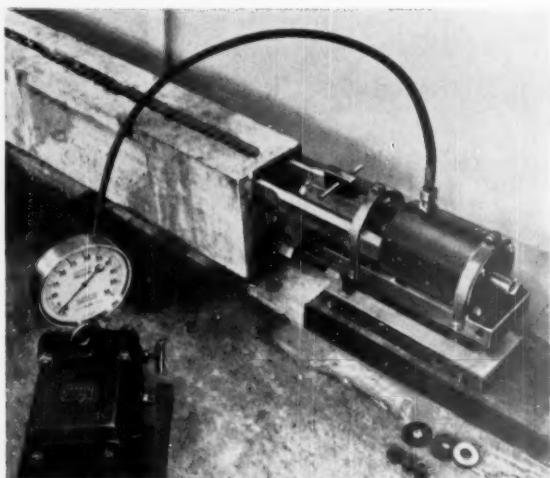
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## PLANNING AND THE PUBLIC

**P**LANNING today seems to be in somewhat the state of a Court of Justice near the end of a case. Most of the available evidence has been taken (or we hope so); the judge and the lawyers have retired to await the return of the jury with a verdict and the public in the gallery quietly talks about anything but the case or just twiddle their thumbs during the period of waiting.

Somewhere about the middle of 1951 the planning court will wake up and learn what its individuals will regard as the best or the worst, according to their several preconceptions.

Planning is now in the hands of the planners, and the country awaits the 145 development plans which the Act of 1947 requires to be forthcoming in that all-important year of grace, 1951. Thereafter, we suppose, the five-yearly revisions of the plans will keep an established fact continually before the public and the same hiatus will not occur again.

What, after all, is the nature of town and country planning? What does it really mean to the ordinary citizen? How does planning fit into our particular kind of democracy? These are questions which are posed in the latest broadsheet to be issued by Political and Economic Planning.\* To a certain extent the answers are given in the same pages, though it would seem that even to the anonymous contributors of the broadsheet the situation is anything but as clear as noonday.

A development plan and its adoption is only a first step and can be but a guide for the future; it is the motion before the meeting, to be discussed in detail; the more vital is the examination and the more

precise and knowledgeable the discussion, the greater the possibility that the plan may be revised and wise modifications, made in the light of second thoughts, be passed on to the future.

The present pause—the wait for the publication of the plans—is, without doubt, the appropriate opportunity for stimulating interest and support for an orderly future in all the local areas. If the planners are not too busy, if those laymen who have vision enough to comprehend something of the value of planning, if those departmental officials have sufficient imagination, then all these groups will see that the ground is prepared for the intelligent receipt of the development plans; also that the citizen really does get the opportunity to understand something of the problems, that five-year plans are not the prerequisites of any type of totalitarianism and that they can be made and used by intelligent democratic co-operations.

But the co-operation must be democratic: as the P.E.P. Broadsheet indicates, this question is, in common with other kinds of social reorganisation, a very potent one at this juncture. "Whether our democratic institutions will carry through major reforms without becoming less democratic in the process . . ." If wide-area concentrations of planning in the hands of central and county authorities is any evidence of this trend—and it is one that is very applicable to town and country planning—then the antidote must be found in the wider dissemination of the principles of planning and the understanding of them by the layman and by those that planning is meant to serve. As the Uthwatt Report said so pithily: "Planning exists for the planned, not for the planners".

Again, we would stress, it is in the present pause that the opportunity lies for the right sort of education

\**Planning—"Town Planning and the Public";* Vol. xvii, No. 316. Aug. 8, 1950.

and propaganda to be used to the fullest. The Town and Country Planning Act gives wide powers, affecting the whole of the individual's physical environment and that of his sons and grandsons; it is potentially one of the most comprehensive social reforms ever introduced into this country. But it is an insidious reform in the sense that it does not affect the individual in the same urgent way and all the time, as, for example, the Health Services; therefore he has less incentive to read, mark and digest its implications. He should be assisted by all those who can assist, both official and unofficial, and now would seem to be the time to do it.

The imposition of limits to capital expenditure and the general lack of national resources will, of course, slow down the whole process of planning and delay the advantages of its application. But this should not, we maintain, cause those in authority to

deem it unwise to stir up the interest and expectations of the public in the prospects which will be opened up by the forthcoming submission of the first development plans. As P.E.P. says, "If it fails to hold popular support, then town planning loses the only driving force capable of making it an effective social measure".

Our democracy is a well-established and experienced way of life, however much its detractors may demonstrate its illogicalities; do we not laugh at ourselves where some others would walk out? And, being so, it is an establishment that can well stand being told things, even about the details of planning and can, in the knowing, be given the chance to criticise and to appraise. After all is said and done, it is Everyman and his family that is to use—and to pay for—the results of planning.



HARPUR HOUSE. 36 CONDUIT STREET. W.C.1

The original shopfront was damaged during the Blitz. It has now been replaced. The new frontage was designed by Harold E. Moss, F.R.I.B.A. of the firm of Lander, Bedells and Crompton, occupying the building. The lettering on the fascia is finely done.

## EVENTS AND COMMENTS

### ABNER ALL AT SEA

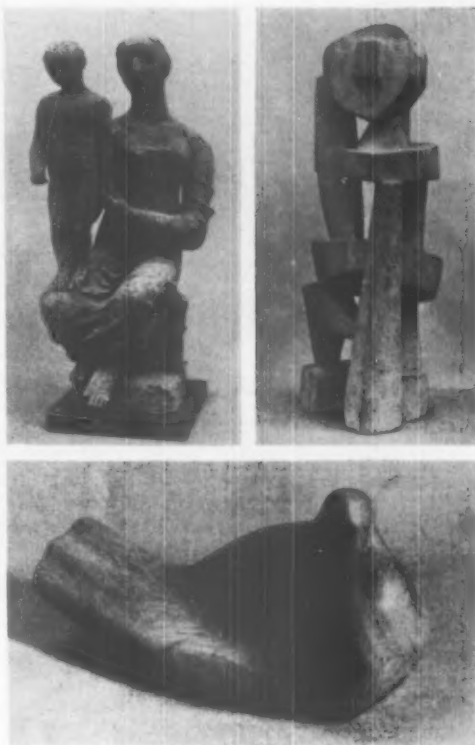
IN order to get architectural information for this week's Events and Comments I chartered a one-cylindered motor boat, a boat boy and two fishing lines one afternoon last week. When we had caught our twenty-fifth mackerel, some authorities have it that it was our twenty-sixth, the boy decided that the engine, which to my inexperienced ears was going perfectly, should be tinkered with. So outstanding were his ministrations that the boat ceased to go, permanently. With a stiff off-shore breeze we drifted out to sea tethered only by an anchor with an inadequate amount of rope attached to it. On the suggestion that we might pull for the shore I was told that owing to an unfortunate oversight the rowlocks had been left on the beach. The children thought this a huge joke and the breeze freshened. Having read in books about shipwrecked sailors I tied my shirt to an oar and waved it hopefully, nothing much occurred. I then found a large red object, part of an aerial target, I think, which I used as a flag. Conservative boats were immediately beached, but a fisherman going round his lobster pots saw us when we were some three miles out and kindly came to tow us in. I caught seven more mackerel on the way home. As is usual on these occasions we were greeted with roars of laughter when we reached the shore but the laugh was on them for they took the whole of the following morning to dry the engine out.

Next day we called on an architect holidaying in a cottage in one of the passes of Snowdonia. In the true manner of architects on holiday his board was set up in the "loft" to enable him to keep impatient contractors supplied with details.

The weather has been a little better this week but one night we had two gales, one from the West followed after a short pause by one from the North. No harm was done but the hitherto friendly horse kicked the lavatory down.

### THE ARCHITECTS' BENEVOLENT SOCIETY

THE Report of the Architects' Benevolent Society for 1949-50 has recently been published. During the year, one hundred and two cases were helped, of which twenty-eight were architects or architects' assistants, fifty-seven widows and seventeen applications on behalf of orphans. The amount distributed in grants and pensions was, if my inability to understand balance sheets serves me right, something over £5,000. This is a tidy sum. The A.B.S. is a fund to which all architects should contribute regularly and even if it appears to be in a very sound financial position and able to cope adequately with the present demands made upon it there is no knowing when this demand may increase, nor when the apparently most securely placed architect, if there is such a thing, may not find himself in need of help. The long list of subscribers is interesting not only for the names included but for those which do not appear. A seven-year covenant is recommended as this enables the Society to claim exemption from income tax on the amount subscribed. The A.B.S. helps all architects, architects' assistants and their dependents whether or not they are members of the R.I.B.A.

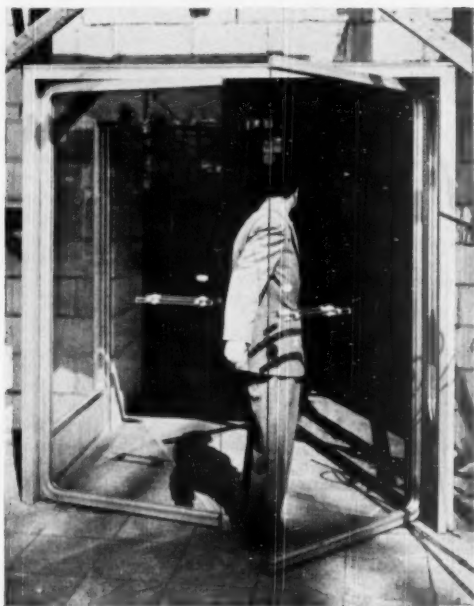
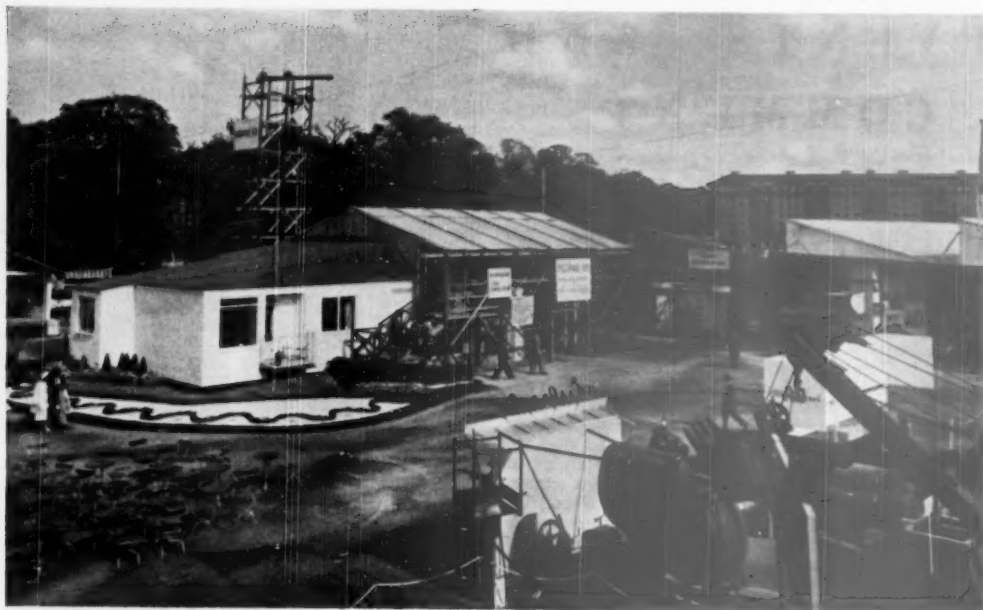


Three of the pieces in the "Sculpture in the Home" Exhibition, at the New Burlington Galleries, organised by the Arts Council. Top L.: *Mother and Child*, in Terra Cotta, by John Matthews. Top R.: *Figure in Bath Stone* by Robert Adams. Below: *Bird in lignum vitae*, by Alan Coleman. The sculpture is shown to great advantage with good modern furniture by all the best makers. The exhibition should be seen.

### STOCKHOLM COMPETITION RESULT

THE result of the competition for linking North and South Stockholm has recently been announced. The winning design, submitted by Per Olov Klevermark, civil engineer, and David Hellden, architect, both of Stockholm, uses a combination of tunnel and suspension bridge and will cost nine and a half million pounds. The tunnel will be driven under Skansen, the great open-air museum and a small inlet which divides it from the north part of Stockholm and the suspension bridge which will be 774 metres long will span the main sea approach to the city. The bridge will give a clearance of 42 metres over the water and the central span will be 440 metres long. A German firm with an all-tunnel design was placed second. While all this has been going on Swedish scientists have been monkeying around with chromosomes and have started to produce giant rabbits weighing ten pounds. In this country this sort of thing could only lead to the nationalisation of fox-hunting.





#### THE SCANDINAVIAN BUILDING EXHIBITION

SOME months ago I mentioned that I was trying to obtain pictures of the "Build Better" exhibition held in Stockholm in May this year. At last I have succeeded. I fear that they are not very exciting but the glass and aluminium doors are interesting and a pleasant alternative to the more or less standardised

type in this country. The general view of part of the exhibition shows that it was quite small in scale. The semi-detached building with the lean-to roof was a sample flat, furnished and inhabited by a human guinea-pig family. The model was one of a series of kitchen designs and illustrates the value of large models for this sort of job.



## A FEATHER AND A COCKADE

IT would probably be considered improper to wear both a cockade and a feather in the cap, but Cockade have certainly earned the latter with their portfolio of illustrations of work completed during the past four years. Sir Stephen Tallents, Chairman of Cockade Limited, in a note which accompanies the portfolio, tells of the founding of the firm which was his idea. In short they are model makers, and exhibition designers and contractors with a difference. They combine first rate designers with the best craftsmen, and not only carry out other people's ideas but supply their own if required. You may remember their extremely successful schemes for the Nuffield Showrooms in Piccadilly (before that organisation reverted to palms and standard ashtrays) or their series of stands for Arthur Guinness, Son & Co. Ltd. Sir Stephen Tallents takes a great interest in the firm as indeed he does in a vast number of other things.

## GLUE, VAMPIRES AND THE ANCIENT EGYPTIANS

DID you know that the ancient Egyptians were fond of using glue? Do you know that Vampire jet fighters, are stuck together with glue? I'll take a level bet that if you are under seventy you knew the latter and not the former. The T.D.A. think the other way round and I think they are wrong in so doing.

## FESTIVAL BUS SHELTERS

LAST week's announcement about Festival of Britain bus shelters reminded me of the London Transport bus shelter competition held in 1947 and won, if I remember rightly, by Dex Harrison, with Arcon second. I have since heard that both the schemes have been found too expensive for production which surely proves that the competition was a failure.

ABNER

## NEWS OF THE WEEK

## Housing Progress for July

The Housing Progress Summary shows that the number of permanent houses completed in Great Britain during July, was 17,013 compared with 18,107 in June.

This brings the number of permanent houses completed during the year to date to 114,822, made up as follows: January 14,356, February 14,069, March 19,385, April 14,862, May 17,030, June 18,107, July 17,013.

The total number of houses completed under the post-war programme is now 895,315 (738,169 permanent and 157,146 temporary).

## Mobile 1951 Exhibitions

The mobile exhibition which, in 1951, is to visit four great inland cities during the Festival summer—Manchester, Leeds, Birmingham and Nottingham—will be the world's biggest transportable covered exhibition.

The exhibition will be on show as follows: Manchester May 4-May 26, Leeds June 23-July 14, Birmingham August 4-25, Nottingham September 15-October 6.

Although it will have some features in common with the main Festival exhibition on the South Bank in London, this inland exhibition will be a complete show in its own right and not a duplication of other exhibitions. It will thus give a further opportunity for displaying British manufactures. It is hoped, too, that it will become a focal point round which each city will build its own Festival celebrations.

In Manchester the exhibition will be held in the City Exhibition Hall; in Birmingham it will occupy Bingley Hall. At Leeds and Nottingham it will be shown in a very large tented structure; at Leeds a hill-top site near the centre of the city at Woodhouse Moor has been chosen, and at Nottingham a central site at Broad Marsh. Thus the 35,000 sq. ft. exhibition has to fit in to three different buildings while using the same units of display construction.

Owing to the difference in levels of the sites the display units will be built on supports which can be raised or lowered as necessary.

The exhibition has been designed by Mr. Richard Levin, M.S.I.A., who was originally a stage designer and art-director in films. During the war he was an R.A.F. camouflage officer and later joined the Ministry of Information Exhibitions Division for whom he designed the travelling Army exhibition.

*Collaborating Architects, Designers and Artists.*

Bruce Angrave, M.S.I.A.; James Cubitt & Partners; Eleanor Esmond-White, B.A.; Peter Judge; Natasha Kroll; Ralph Lavers, A.R.I.B.A.; Eve Levin; Leonard Manasseh, A.R.I.B.A.; Bateson Mason, A.R.C.A.; John Pearce, A.R.I.B.A.; Manfred Reiss, M.S.I.A.; H. A. Rothholz, M.S.I.A.

Owing to the dispute affecting a section of the printing industry in London, this issue does not contain the usual Building News Section. A preview of Leeds Building Week takes its place.

## Glasgow City Architect and Planning Officer

A recommendation is to be made to Glasgow Corporation that Mr. Archibald G. Jury, F.R.I.B.A., at present director of housing in the city, should be appointed to the newly-created post of city architect and planning officer.

The Council intend to correlate the architectural and planning activities of their various departments under the one head with the exception of the transport department.

Mr. Jury has held his present position with the Corporation from January 1949, previously he was principal architect to Liverpool Corporation. During the war he served as a major in the R.E. He is 43 years of age.

## APPOINTMENTS

The Cwmbran Development Corporation have appointed Mr. J. C. P. West, A.R.I.B.A., A.M.T.P.I., to be their Chief Architect. The Development Corporation was set up under the New Towns Act, 1946, to develop a New Town in the Cwmbran area.

Mr. West, who takes up his duties on October 2, is forty-two years of age and for about four and a half years has been working with Mr. Louis de Soissons, A.R.A., as a Chief Architect and Town Planning Assistant. He has been assisting Mr. de Soissons on work in connection with the New Town at Welwyn Garden City and has a wide knowledge of the problems affecting the development of New Towns.

Mr. John Milne, A.R.I.B.A., 8 Walker Place, Aberdeen, has been appointed an assistant on the Aberdeenshire county architect's staff at a salary of £480-£610.

When the Aberdeenshire Property and Works Committee met on September 1 it was reported that only one reply had been received to an advertisement for another assistant architect at a salary of £390-£495, and that the application had been withdrawn.

## OBITUARY

The death has occurred of Mr. Joseph Frederick Walsh, F.R.I.B.A., of Halifax, aged 89.

The death occurred on September 2, of James Alexander Arnott, F.R.I.B.A., of Edinburgh.

## ARCHITECT'S WILL

Mr. John Arthur Browne, registered architect, of Wigan, left £1,268.

## COMING EVENTS

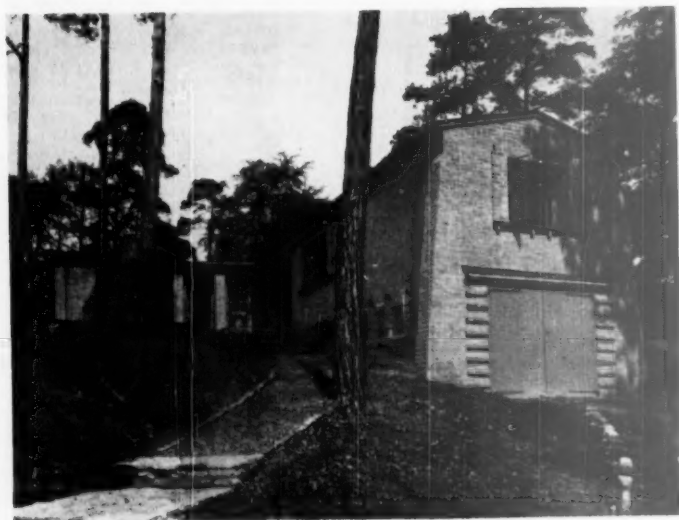
L.M.B.A.

● September 13, at 2 p.m. Lunch at 1 p.m. At Derry & Toms Restaurant, Kensington High Street, W.8. 90th Area General Meeting of Central Area No. 1.



"Green Ridges," Beechcroft, Chislehurst, general view

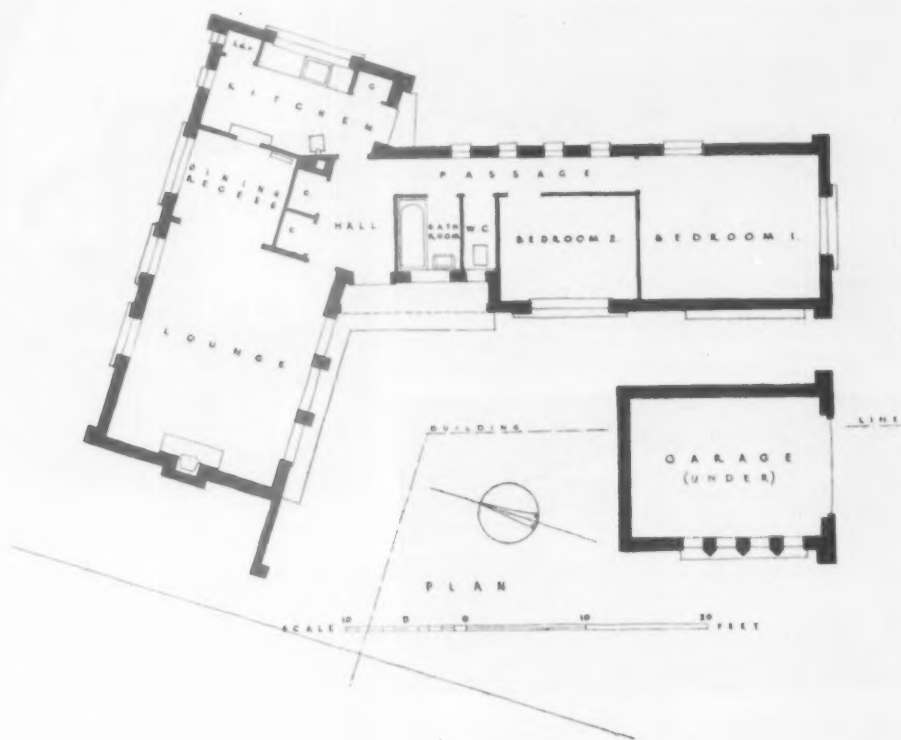
## HOUSE AT CHISLEHURST



THE house is situated at the end of a cul-de-sac on land falling steeply to the south with an excellent view over Camden Park Golf Course.

The intersection of two building lines influenced the choice of an L-shaped plan, which is moulded to fit the contours, provide an easy drive-in to the garage, and give the principal rooms a good view with south aspect.

The roof is of copper, walls local made stocks with darker multi-coloured stock panels and tile dentils to give interest. A selected exposed aggregate on all concrete



**Architect: OLIVER E. STEER, A.M.T.P.I., A.R.I.B.A.**

surfaces, gives a similar texture to the bricks.

Heating is provided by an under-the-floor draught open fire, and by a radiator off the Domestic Hot Water system which is direct.

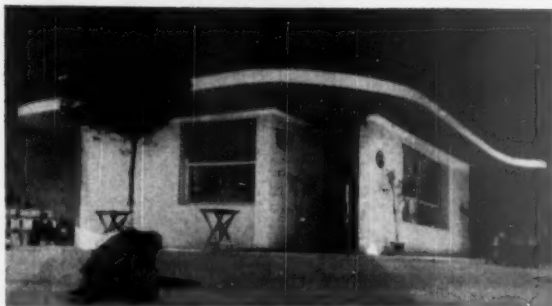
The electrical wiring is by means of a ring main, with fusible sockets to a consumer unit.

The total cost exclusive of architect's fees was £1,546 10s. 9d. The house took nine months to complete.

The General Contractors were Messrs. Campkin & Pearce, of 109 Latham Road, Bexleyheath, Kent.



*The Lounge, seen from the Dining Room*



## CORRESPONDENCE

To the Editor of A. & B.N.

Sir,—Having visited Italy last summer we should like to endorse Mr. Norman Westwood's statements concerning contemporary Italian architecture in his article of August 18 in the A. & B.N.

We are sending you these photographs taken on our visit which we hope will be of further interest: Signal-box at a junction on the main Rome-Florence line, a type now common at many new stations. View of a small bar outside Vicenza station.

Shop near the Piazza Barberini, in Rome.

These buildings show the high standard of design and refreshing qualities which may be achieved in small buildings.

We also include two photographs of the Thermae of Caracalla, showing their contemporary use as an open-air theatre, which allows for production on an enormous scale.

Yours, etc.,

J. E. LANE

P. G. PLUMRIDGE

I. MILTON-PLUMMER

## Houses, Lamp-posts and Ice Cream Trailers

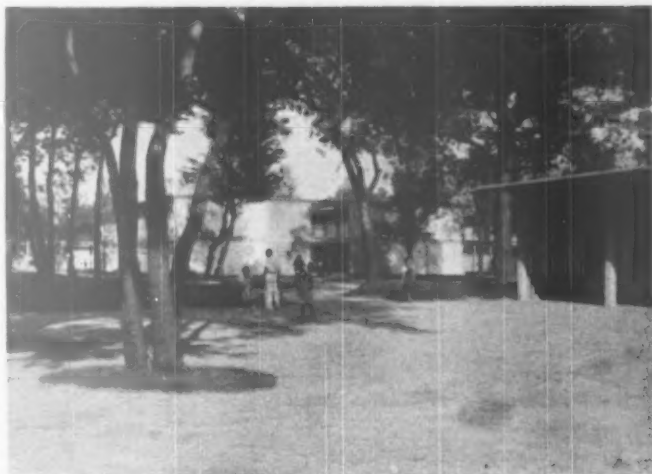
To the Editor of A. & B.N.

Sir,—Allusions to these varied subjects in recent issues suggest that there is still some ground for the pronouncement made some years ago by a well-known architectural critic. He said, with Ruskinian directness and perhaps with over-emphasis: "The public is a mongrel cur gorging with concentrated attentiveness the offal in the gutter, and it is our duty, on each and every occasion that offers, to kick the brute in the ribs."

I am, etc.,  
EDWIN GUNN.

# LIDO IN VIENNA

architects : Professor  
MAX FELLERER  
and  
EUGEN WÖRLE



1. The entrance square, with a block of lockers in the background.



2. Blocks of family cubicles seen from the main square.



3. The garden court between blocks of cubicles (No. 1 on fig. 9).

## GENERAL

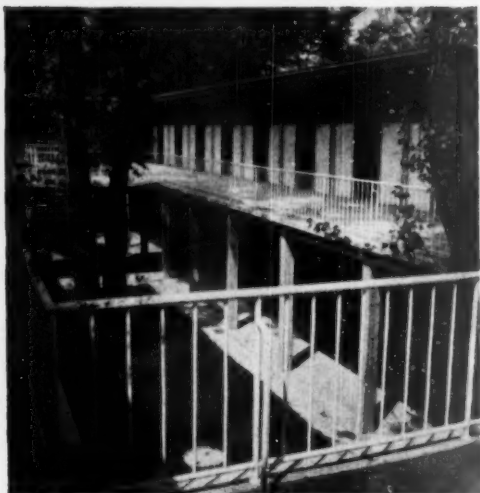
**T**HE Lido 'Gänsehäufel' is on an island situated in a lake formed by the old bed of the Danube. The first lido, built on part of the island in 1907, was completely destroyed in the last war. In 1946 the City Council of Vienna invited eight architects to take part in a competition for the redevelopment of the island. The winning entry was that of Prof. Max Fellerer and Eugen Wörle, whose design is now being carried out. Work on the site was started in 1948, and the lido was opened to the public in June 1950, although some parts of it, notably the restaurants, the buildings housing the filter machinery for the swimming pools, the children's pools, and the tennis courts and playing fields will not be completed until the spring of 1951.

The lido occupies an area of approximately 185 acres, and has three beaches of a length altogether 2,200 yds. It can accommodate up to 30,000 people.

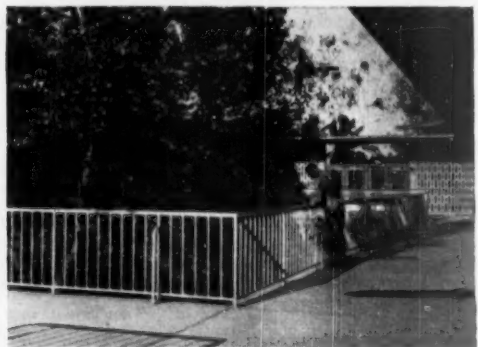




4. Interior of upper floor of a block of lockers.



5. Interior courtyard of a block of lockers (No. 2 on fig. 8).



6. Looking into the courtyard of a block of lockers, clock tower in the background.

## PLANNING

The island is approached by a reinforced concrete bridge, with parking spaces for cars and cycles immediately beyond. The entrance and administration buildings enclose on two sides a large stone-flagged square, from which the changing accommodation is reached (fig. 1).

The changing accommodation consists of four blocks of lockers, and six blocks of cubicles or "cabins" for family use. All are planned on two storeys, with separate access on ground and first floor, and each block has showers and w.c.s for each sex (figs. 2, 3, 4).

The blocks of lockers are designed round a central courtyard with existing trees. They are enclosed on two sides by two-storey screens of hollow precast concrete blocks. On the east elevation the blocks are connected to the main square and the restaurant by a long gallery, which affords a fine view over the swimming pools and the beach, and has been made broad enough to serve as a promenade deck and observation platform (figs. 5, 6, 7, 8, 9).

On the north end of the island, in the most richly wooded part, are situated 500 season "cabins," and a cafe restaurant. The season cabins are spaced wide apart, and are built in blocks of one, two and three storeys, each cubicle having its own covered balcony or terrace (fig. 10).

The restaurant has accommodation for 2,500 guests. It is attractively situated among trees and overlooks the boating lake and the swimming pool. It is divided into various covered and open terraces and balconies, and has dance floors and band stands. It thereby caters for the taste of those holiday makers whose favourite diversion is to sit eating a meal or sipping a drink while watching the activities of others (figs. 11, 12).

The main square is flanked by a series of shops which supply every need of the bathers, and include a hair-dressing salon and a chiropodist. Its focal point is a reinforced concrete clock tower, 88 feet high, which can be seen from almost the whole island (fig. 13).

The small peninsula on the south of the island is set aside for gymnastic classes, dancing and musical performances and popular lectures. For the further diversion of the bathers there will be completed in 1951 a large boating pond, a diving tower, chutes, a swimming pool with artificially agitated waves and children's paddling pools.

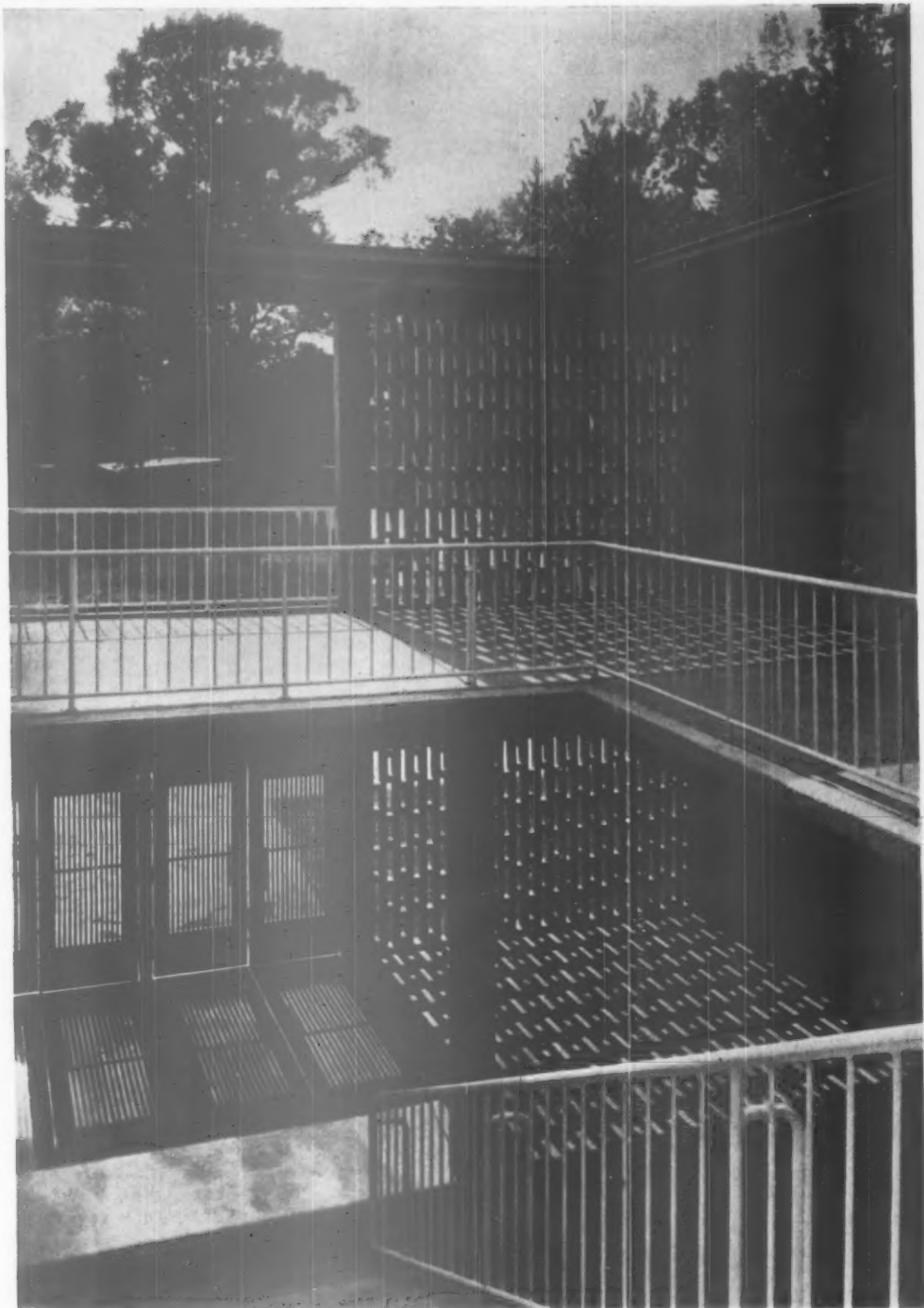
All buildings are so planned that 82 per cent. of the island is free, forming the spacious beaches, meadows and woods in the lay-out of which the island has its greatest charm and value for the sun-starved inhabitants of a great city.

## CONSTRUCTION

Construction throughout is of reinforced concrete. To reduce maintenance costs, concrete surfaces have been left unrendered. This required most careful detailing of shuttering by the architects, particularly on curved surfaces (fig. 14). Non-loadbearing wall panels are of concrete blocks and whitewashed externally. The reinforced concrete columns are uniform throughout, with the exception of the mushroom column supporting the circular terrace of the restaurant. There are no rainwater down pipes, rhones draining into concrete spouts which discharge at intervals from eaves level to the ground (detail visible on fig. 6). All sewers on the island converge on a central automatic pump, from which sewage is discharged through a pipe under the bridge to the main sewers on the mainland. The total cost was 28,000,000 Austrian Schillings, approximately £400,000.

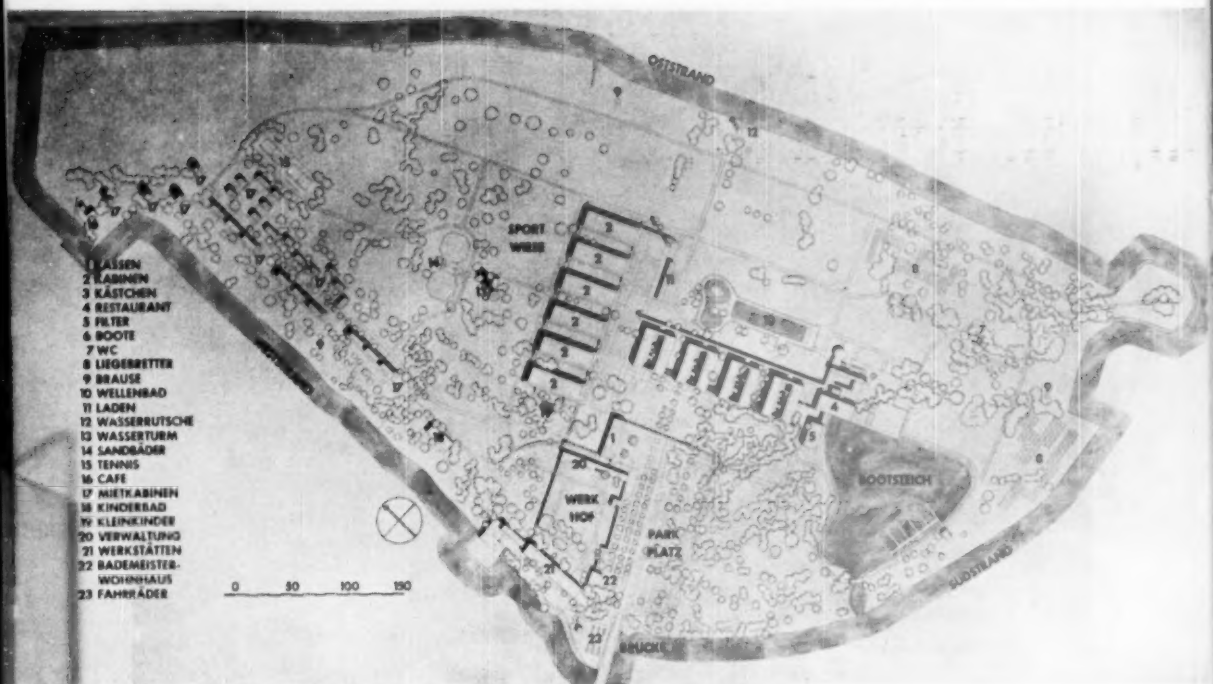
EDITH M. CAMERON



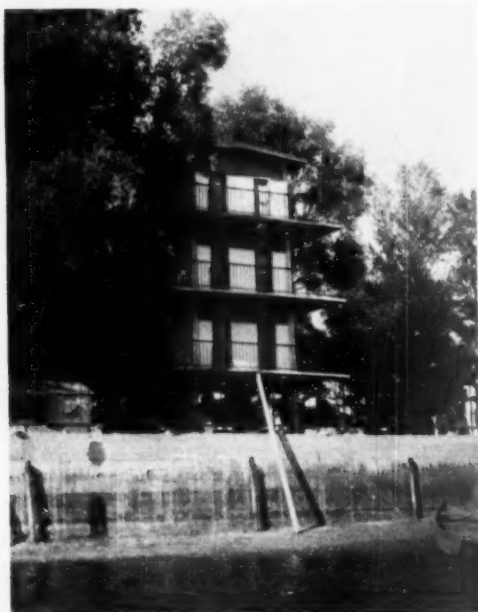


7. The hollow concrete block screen in a block of lockers, entrance buildings in the background.

L I D O   O N   A N   I S L A N D ,   V I E N N A



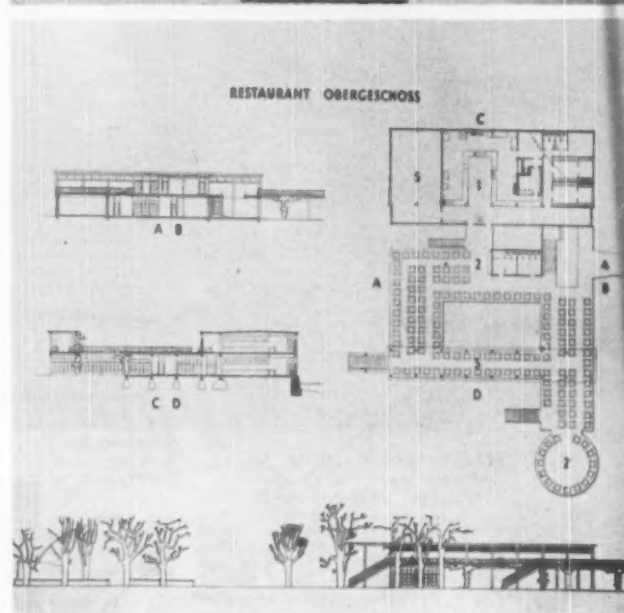
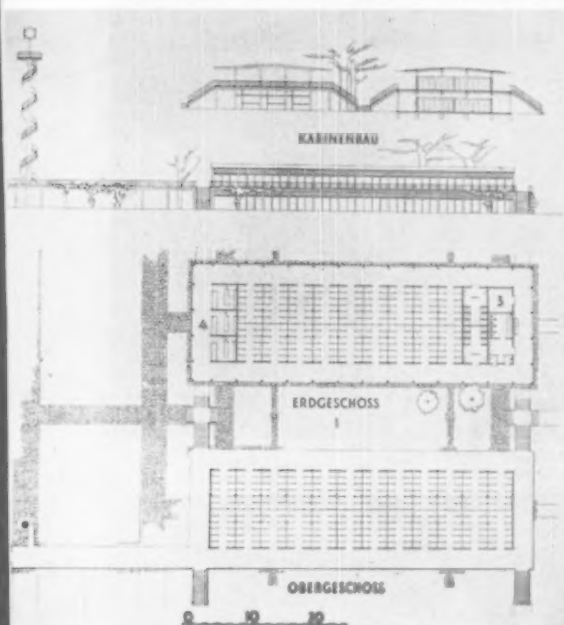
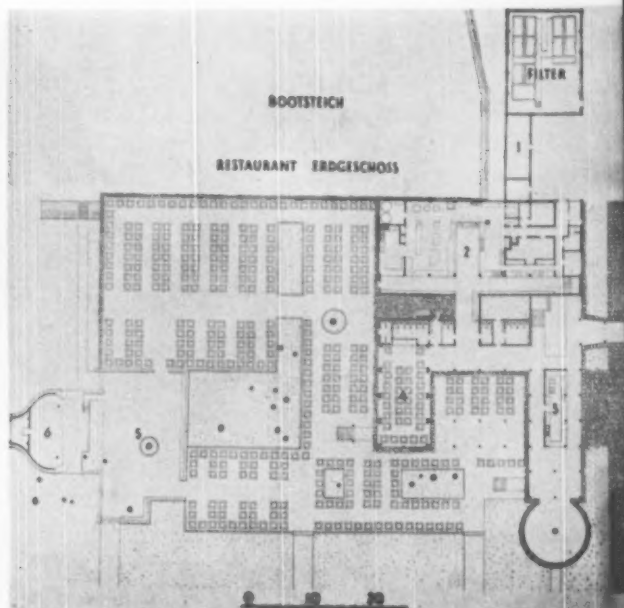
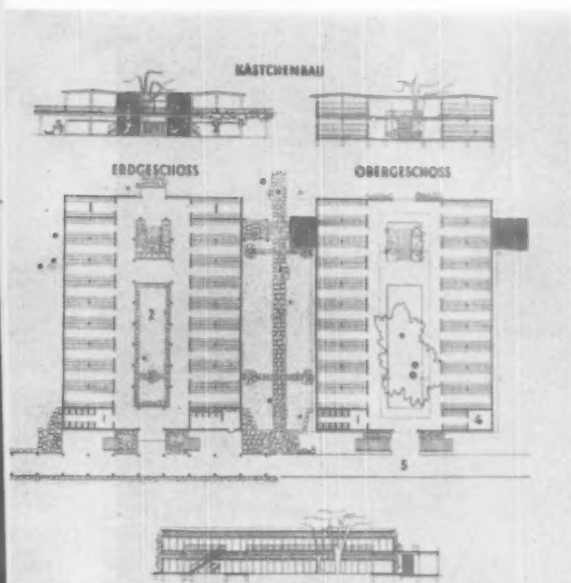
15. Plan of the island.



10. A three-storey block of season cabins, seen from the beach.

## KEY TO SITE PLAN

1. Entrance.
2. Family cubicles.
3. Lockers.
4. Restaurant.
5. Filter for swimming pool.
6. Boat hiring.
7. W.C.s and showers.
8. Sunbathing platforms.
9. Showers.
10. Swimming pool.
11. Shops.
12. Chute.
13. Water tower.
14. Sunbathing enclosures.
15. Tennis courts.
16. Cafe.
17. Season cabins.
18. Schoolchildren's beach.
19. Kiddies' paddling pool.
20. Administration.
21. Workshops.
22. Superintendent's house.
23. Bicycles.



8. Plans, elevations and sections in a block of lockers.  
9. Plans, elevations and sections of a block of cubicles.

11. Ground floor plan of restaurant.  
12. Upper floor plan, elevations and sections of restaurant.

**KEY TO PLANS OF LOCKERS (fig. 8):** 1 Club Lockers. 2 Interior courtyard. 3 Garden court. 4 Store. 5 Gallery to the restaurant. **KEY TO PLANS OF CUBICLES (fig. 9):** 1 Garden court. 2 Clock tower. 3 Store. 4 Shop. **KEY TO RESTAURANT PLANS:** ground floor (fig. 11)—1 Transformer. 2 Kitchen. 3 Self-service counter. 4 Covered veranda. 5 Dance floor. 6 Band stand. upper floor (fig. 12)—1 Kitchen. 2 Terrace. 3 Covered terrace. 4 Gallery. 5 Chair store.

R E S T A U R A N T S : L I D O I N V I E N N A



14. The circular staircase to the clock tower, shortly after completion, showing marks of shuttering.

# VIENNA LIDO

13. Part of the main square. In the foreground the staircase leading to the gallery to the restaurant, clock tower in the background.



# HISTORICAL WATER - PROOFING

Report of a Lecture given by MR. HOPE BAGENAL, D.C.M., F.R.I.B.A., at the York Summer School of Architectural History and Measured Drawings held in St. John's College.

MR. BAGENAL in directing students' attention to "the parapet" said it was not characteristic of ancient architecture. This was surprising because the flat of Egyptian and Syrian and Palestinian building with their parapets must have been well known and the Greeks developed military battlements. An external parapet was not, he thought, mentioned in Vitruvius (although the word "pluteus" occurred in reference to bathing basins and is translated "parapet" by Granger). The Romans had attic courses on their triumphal arches and there must have been plenty of balustrades on the balconies in Ostia. The reason was clearly that, even though hipped roofs were known, the long ridge and gable end, together with the shooting of rainwater from eaves and careful protection of wall head by tiles and cornice, remained a powerful Graeco-Roman tradition. A parapet with open gutter was clearly a thing to be mistrusted.

Such in fact may have been one of the secrets of the Comacine Masters because it was remarkable that Romanesque building belonged to the antique world in that it was a style without parapets.

Although large cathedrals were built, we must recognise broadly that Durham, St. Albans, early Lincoln, were Romanesque churches with water table, corbelled cornice and heavy overhanging roof giving a plasticity very different to the later Gothic where the roofs rise out of a flower garden of balustrades, pinnacles. But meanwhile the eaves gutter or classic cyma had disappeared and the common system was that of dripping eaves which had obvious disadvantages. Ostberg at the Town Hall at Stockholm instead of an eaves gutter had built a heavy granite channel or splash plinths along the front forming a splash plinth of great size but that could not cross the gateway. The first time he, Mr. Bagenal, saw the Town Hall it was pouring with rain so that to enter the courtyard one had to run the gauntlet of heavy drops, like pilgrims at a Norman Monastery. The Stockholm Town Hall owed a great deal artistically to its great broach roof. But what happened when you wanted to replace a tile or copper sheet? Here we had one of the reasons for altering to a parapet in buildings of large size, namely the difficulty and danger of roof repair. There were also the problems of snow avalanching off, and of tiles falling off to aisle roofs below; also, although the Norman water table often projected far and threw the drip clear of the wall head, yet when walls were high, as at St. Albans, the lower walling must have been continuously subjected to a slow, heavy dripping and splashing. They then had two factors arising from the sheer size of Norman Cathedrals.

They had grown too high, inaccessible roof systems were inconvenient and roofs were too extensive in area to ignore rainwater disposal. The answer to the accessibility and security problem was the parapet. They began tentatively in Norman times and at first were low in height. The earliest was probably that over the Eastern aisle of the Norman North Transept of Ely about 1100, which was one course in height with a moulded cap. This and all early Gothic parapets projected on a water table, as at Fountains, and right on into the fully developed Gothic as at Beverley Minster; and only later in the Perpendicular style tended to set back to the wall face. But constructional problems at once arose; the roof now drained on to the wall head and some kind of water channel or gutter must be provided and roof timbers raised two or three courses above what was the eaves line, on a load-bearing wall behind. They had no technical term for this rear wall carrying the roof but in French it was called the *bahut*.

A great European work of art, the clerestory of the apse of Notre Dame in Paris, owed its character to a transition from the dripping eaves to the developed system. That great scholar of building and indispensable authority on historical studies—Viollet Le Duc—describes it thus: "In the original form in the time of Maurice de Sully (1160-1180) there were no gutters at the base of the great roof. The wall head *couronnement* carrying the roof timbers consisted of four slightly projecting corbel courses having a checker ornament (*damiers*) above which was placed the top moulding or roll (*boudin*) taking the roof. Towards 1220 when Gothic architecture had already fully developed in Paris they removed only the top moulding from de Sully's cornice and placed above the four checker courses a cornice formed of a course of leaf ornament and a crowning drip stone (*larmier*), the whole presenting a very pronounced projection.

"The back of this drip stone was channelled to form a gutter which distributed the rainwater into large gargoyles placed above each flying buttress. As to the new roof timbers they were laid upon a *bahut élevé* and a stone balustrade was fixed on the *larmier*".

Artistically the key lay in the words "The whole presenting a very pronounced projection."

The fine familiar apse as we know it was made by preserving the Romanesque water tabling with its corbelling and its checker band and adding to it the full Gothic cornice and *larmier*.

But this was not all. Shortly after the alteration described above "The architects of the Cathedral added a second

course to the primitive *larmier* in order both to give the appearance of strength and also to avoid a thinness which might risk fractures . . . At Chartres we see on the chapels of the choir two *larmiers* superimposed. It is clear that the architects of the early 13th century saw to their cost that by placing upon the base of their cornice a crowning member thinner but much more projecting than the Romanesque tabling they were risking fracture. First they doubled them—then made them much thicker."

This *larmier* is worth noticing. It meant tear stone, dripping stone, lip stone. It had a talus or sloping back and a coupe *larme*, or throat. That combination gave it considerable efficiency. It provided a run off and a good drip. French cornices in this period became almost standardised—"Being composed nearly always of two courses. The lower forming a neck ornamented with crockets or leaves; the upper carrying a projecting *larmier*." The great cornice on the towers of Notre Dame (Paris) had two lower courses of leaf ornaments. This French cornice gave a profile as stylised as a Greek cornice and also with functions differentiated. The Greek had a marked overhang, at least three drips, and in the marble tiling showed evidence of anti-capillary gap. The French had a single large drip and recognised the value of the sloped back. It was this last which was significant and it was in fact the Gothic instrument of water proofing.

When water rested on horizontal surfaces it was the exposed vertical joints which admitted the damp. Here leakage into fabric began. Therefore a rapid run off was very useful indeed; it caused rapid drying and might make all the difference to durability. Of course the density of the material and the non-shrinking of mortar joints made a difference but deliberately sloping distinguished Gothic work functionally.

The gargoyle or collecting spout did not immediately follow. We find the gutters of Notre Dame (Paris) merely dribbling water away through holes in the base of the parapet on to the *larmier*. And we find that the early balustrades of Chartres had no plinths and the separate colonnets stood on the back of the cornice—the water flowing through them on to the *larmier* and thence dripping. Gargoyles, says Viollet Le Duc, were not found in Paris before 1225. But Mr. Bagenal had seen them in England. They certainly existed on some of the late Norman building as the Abbey Gateway in Bury St. Edmunds.

As soon as gargoyles appeared at high roof levels they caused trouble. The water concentrated into cascades and discharged over the buttresses,



kept the masonry wet and damaged aisle roofs. Lead roofing of aisle was probably stimulated by this.

The technique of using the backs of flying buttresses as open channels discharging beyond the aisles was used in France and England but this produced all sorts of problems. The flying buttresses did not reach high enough and water from top spouts had to fall some feet on to the flying buttress channels and splash or was blown by the wind. Early examples of short stone down pipes in the clerestory masonry occurred at Chichester and at the cathedral at Sées. These discharged on to the flying buttress channels.

Later they occasionally added raking aqueducts from flying buttress to roof gutter level. Worst of all the later builders sometimes deliberately designed the flying buttress so as to come above the haunch of the vault in order to reach gutter level and give access to the raking channels. Here in the history of structure we had to point to a serious design error and note the result. Francis Bond recorded as follows (*Gothic Architecture in England*, page 400): "The vaulting thrust, which it is the function of the flying buttress to transmit, is mainly felt at a considerably lower level than the main roof gutter" . . . At Famagusta in Cyprus flying buttresses set too high in order that they might act as aqueducts did actually ruin the church; and they would have done so in Evreux nave if they had not been reconstructed." (Authority, Enlart's *Histoire*.) Bond also illustrated a high level flying buttress added to Southwell choir about 1337. He says "On the whole this utilisation of the flying buttress did not find much favour in England. In France on the other hand it was worked out to a complete solution. . . At Amiens, Auxerre, Bordeaux, Abbeville, Eu, there was placed on the flying buttress proper, a balustrade and on the balustrade an inclined bar, the other surface of which was hollowed as a channel." The carrying of water through the fabric of the pinnacle or down the buttress to aisle gargoyle, also gave trouble. "It was not long," says Viollet Le Duc, "before they perceived that the channels through masonry were never able to dry out, that they choked up and caused filtration into the mass of the buttress beneath. Towards the middle of the 14th century therefore they turned the channels to the right of the pinnacles and led the water round open to the sky." The choice was between two systems each with its disadvantages. The danger was, on the one hand that of choking pipes and seepage, and on the other of deluging the lower wall.

One cause of the delay in using metal down pipes was that they could not then cast iron piping, and lead was expensive. Piping appeared early in England. In 1241 an order was given that lead pipes should be put from the top to bottom of the White Tower in the Tower of London because of its new coat of whitewash. The lining of stone ducts and funnels with lead seemed to have come first and this was an improvement on the pierced stone ducts.

We had in the City of Oxford some examples of lead lined stone conduits which enclosed the ground floor down pipes in a great many colleges. These Oxford examples were, however, not very old because none were shown in Loggan's *Oxford* (Views of Colleges 1688). It seems from Loggan's views that at the end of the 17th century water was discharged at all levels. There were high level spouts on college gateways (New College); there were pipes leading down to spouts at first floor just over ground floor window heads (Brasenose); there were a few examples at Corpus where lead pipes came all the way down to the spout at pavement level. Loggan's views of Cambridge showed the Schools Quadrangle where there was a typical example of lead pipes leading down to large spouts at first floor level and discharging at that height on to specially paved drip areas. Here we probably had the true medieval example. Pipes got damaged if brought to the ground but if in a large building they spouted universally from high level they must have been a nuisance. The result in Oxford where stone was plentiful, but not in Cambridge where it was scarce seemed to be the fine series of pierced stone conduits reaching to first floor level—a unique feature not seen in any other city and still demanded in Oxford college buildings and in alterations.

Now the practice of spouting from first floor level and main roof must have specially affected the base mouldings and projections so characteristic of Gothic work. He had already mentioned the function of sloping of Gothic cornice and it was probable that the very careful working out of protective base mouldings was partly due to the cascading and splashing from aloft. And we found a steady progression from the step bases of Norman work. The way to deal with drips was to splash outwards for which purpose a good projecting slope to a base or plinth was the effective thing. This sloping base seemed to have dawned in Cistercian times and to have greatly impressed the builders of Whitby Abbey judging by the immense *glacis* given to the choir foot. The rapid run off, the outer splash was certainly realised; but as Bond pointed out, the feathered joints on these early slopes were a source of decay and led to the ingenious covering of joints by base mouldings giving the marked horizontal lines used so effectively for aesthetic purposes by the designers of Lincoln, Salisbury, Kettering, etc.

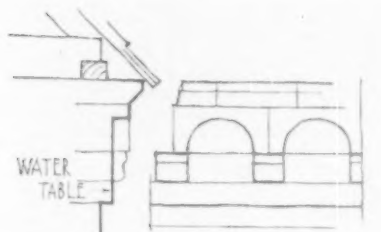
But a further refinement in the shape of what appeared to be a damp proof course under the main drip mould of the plinth had recently been discovered by Mr. E. A. Gee of the Royal Commission on Historical Monuments. This occurred in King's College Chapel, Cambridge. It was no more than 3/8ths of an inch thick and was formed of oyster shells. It was seen at its best on the south-west turret; how far it extended into the wall he did not know. Mr. Bagenal suggested that its function might equally well be to prevent damp going downward to the vertical course from the continually wetted drip stone above.

When we surveyed our own Renaissance style from the rainwater point of view, the main fact was that the talus or slope of the cornice had gone; we had transferred from a Nordic to a Mediterranean system of profile. So long as roof overhung the main cornice this did not matter. He would draw their attention to the first true type of English Renaissance house. Sir Roger Pratt's "Coleshill" was the example but there were many others—Belton House, Thorpe Hall, Melton Constable, Judge's Lodging, Oxford, Cupola House, Bury St. Edmunds.—all these had a clear character. They had a flat roof with open balustrade on the top of a pitched roof. They had the hipped shape on a plain oblong plan, that was to say they had eliminated the gable and taken the overhang of the cornice all round the perimeter of the building, thus increasing the total rain protection to wall head and getting rid of the dangerous exposed foreheads of Jacobean work.

Also the Cyma acted as a true gutter (which was its origin and cause) and there were no parapets on the wall head. We found often rainwater pipes taken through the cornice, or swan necking over them, as at Wolvesey Palace, Winchester. But they had to consider their lead flat perched aloft (often with a little gaze bower) and islanded from main walls. These lead flats doubtless dripped over a lead string on to the slates; at Thorpe Hall a rainwater pipe used to come inelegantly down the roof slope. Doubtless some builders brought pipes down inside the house and perhaps collected rainwater at high level indoors for domestic purposes. That Wren was conscious of rainwater problems was clear. First he unattractively pitched up his roofs and his pediments (it was to Mr. Bagenal, one of his delightful characteristics). He acknowledged and made features of rainwater heads and down pipes (he put dates on rainwater heads as at Hampton Court, 1690). He covered his cornices and strings with lead and last but not least he put overflow pipes in his large gullies and rainwater heads (Trinity Library roof), so that they gave warning when choked.

It was when the Georgian parapet became popular and when (to use a phrase of Sir William Chambers) architects followed the licentious practice of intermitting the cornice in favour of a brick band that serious maintenance troubles began. Then was the wall head exposed as never before; and at the same time the parapet exposed to wet on both surfaces acted as a kind of reservoir of Damocles suspended overhead. And the flat copings admitted water at exposed vertical joints. Contrasting the Gothic parapet and the Georgian style with its single throat on a slightly weathered coping Mr. Bagenal remarked "No wonder some Georgian architects as at St. Edmund's Hall, Oxford, preserved a Gothic coping on a Georgian parapet." Also to reduce the capacity for saturation it was better to reduce solid area and pierce the parapet. In other words balustrade was better than parapet and at Fenton House, Hampstead, there was a delightful example (perfectly

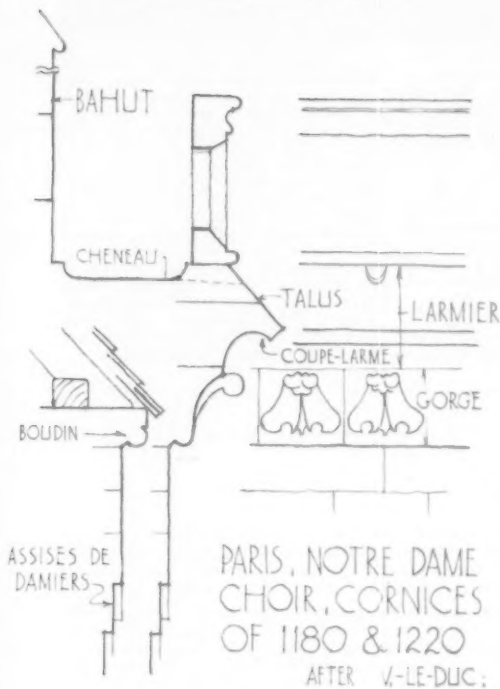




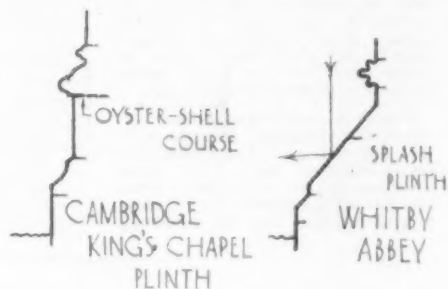
ROMANESQUE CORNICE



SWITWELL MINSTER.  
FLYING BUTTRESS  
RAISED TO GUTTER  
LEVEL & USED  
AS R.W. CHANNEL  
AFTER BOND



PARIS, NOTRE DAME  
CHOIR, CORNICES  
OF 1180 & 1220  
AFTER V.-LE-DUC

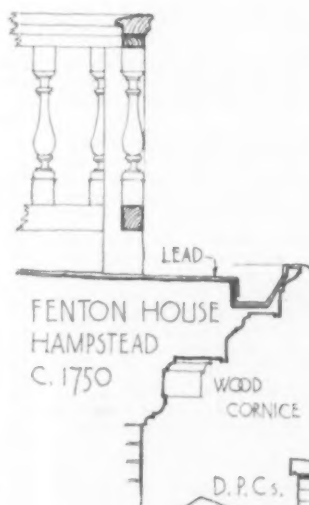


OYSTER-SHELL  
COURSE

SPLASH  
PLINTH

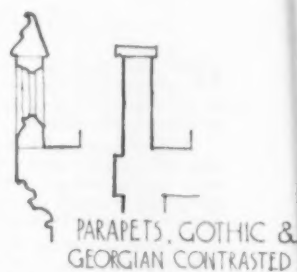
CAMBRIDGE  
KING'S CHAPEL  
PLINTH

WHITBY  
ABBAY

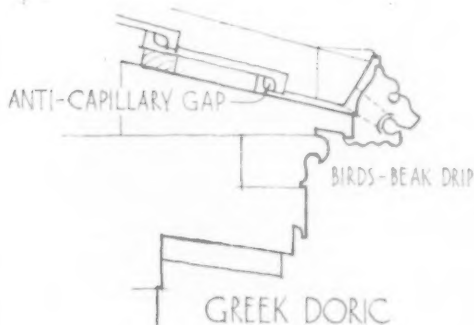


FENTON HOUSE  
HAMPSTEAD  
C. 1750

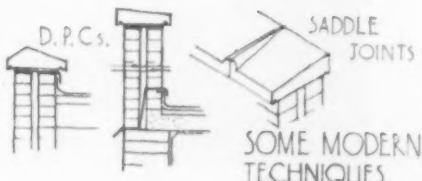
WOOD  
CORNICE



PARAPETS, GOTHIC &  
GEORGIAN CONTRASTED



GREEK DORIC



D.P.C.s.

SADDLE  
JOINTS

SOME MODERN  
TECHNIQUES

Illustrations to Mr. Hope Bagenal's Lecture on Historical Waterproofing.

appropriate to-day) of a wooden balustrade through which the rain ran off on to the cyma.

The repeated frost, decay, soakage, and repointing of parapet wall led to the practice of specifying a rendering on the exposed back (as in Macey's 1890 specification). But that had the disadvantage of hindering the drying-out process; a double wetting surface demanded a double drying-out.

With the advent of cement mortars another factor entered, namely the initial shrinkage of mortar joints; they might look along a stone coping and see hair cracks in joint after joint. These hair cracks were of course a great cause of capillary attraction, and of the moving inward of rainwater, whether on the vertical or horizontal surfaces. Again compare the old lime mortar joints on a Gothic parapet where the adhesion of the joint to the stone was good and where the run off ensured that frost action was not prolonged. It was of course the damage done by hair cracks which caused the swing away from the dense cement mortars so common 25 years ago.

Finally in recent times we had witnessed the widespread superseding of the hand-made brick by the mass produced machine made brick whose characteristic was variability. When clay was not selected but fed wholesale to the machine then we could get

cheaper brick but at a price. The price was that we could no longer rely on an all exposure brick unit when we specified a common brick. Bricks good enough if well protected from saturation were not good enough for exposed positions. "Next time you are in Birmingham or in Leicester," said Mr. Bagenal, "look at the chimney heads of the 19th century red brick houses. In street after street you will find the chimney heads are in a blue Staffordshire brick. The reason is that the red machine-made brick from the Keuper Marles will not stand severe exposure as a London stock will do."

Quoting from B.R.S. Digest No. 17, Mr. Bagenal said that bricks made from clays of marine origin, notably bricks from the Oxford clay (of which by far the most important were Flettons), from some clays in the London and Hampshire basins and from some of the Keuper works, contained an appreciable amount of sulphates. This, he said, was a cause of weakness in the presence of wet and we were recommended in "Some Common Defects in Brickwork" (National Building Studies Bulletin No. 9) that the proper method of preventing defects resulting from the crystallisation of salts in brickwork was

"(a) Correct design of constructional details such as providing damp courses, flashings, and roof drainages

to prevent entry of water into the body of the brickwork;

(b) Avoidance of the use of bricks with a high soluble salts content in very exposed positions."

The parapet was one of the positions giving maximum exposure and the type of brick mentioned above could give serious trouble if used light-heartedly in modern parapets. Hence a series of recommendations. They found in the housing manual an attempt to restore the slope or run off which was efficient in the Gothic coping. They found the vertical joints of flat copings protected by the saddle joint. They found the cavity wall recommended for parapets as giving both protection and also the desirable drying-out area and above all they found a new and vital emphasis on the metal damp-proof course. The upper one under the coping would not defend the coping itself from frost but would prevent percolation into the bricks. The lower one must be taken through the wall so as to drain the cavity; that was fairly well recognised. But it must do something else as well. It must project so as to intercept the surface water from parapet moving downwards. If it was flush the water would cross it and would contribute to saturation of the wall head. That little tongue of metal had still to perform an age-old function. At the end of our historical narrative it had in fact to fulfil the function of the cornice.

## THE JOHN INNES HORTICULTURAL INSTITUTION *Glasshouse Installation at Bayfordbury*

OF recent years the activities of the John Innes Horticultural Institution were handicapped to some extent by the overcrowding of suburban housing round its estate at Merton, Wimbledon.

This Institution is the principal organisation associated with experimental research in horticulture and the work carried through at Wimbledon in the past has been particularly valuable in view of the close association maintained with the commercial growing industry.

Taking advantage of the expiration of its long lease at Wimbledon, a larger site in more suitable surroundings was sought and eventually secured in the mansion and park of Bayfordbury, near Hertford. The new estate comprises an eighteenth-century mansion, well adapted for conversion to its new purpose, eighty acres of woodland and nearly four hundred acres of parkland with areas of varying aspects and both light and heavy soil.

A most important part of the practical work of the John Innes Institution has always been its glasshouse research, for which it is world-famous. The John Innes greenhouse composts are, of course, a household word among horticulturists in this country.

It is not at all surprising that, faced with the need to build a large area of new glasshouses for their ordinary research purposes, use should be made of the construction as a means of testing improvements in glasshouse design and management.

With the cordial assistance of the Ministry of Agriculture and sponsored by the Agricultural Research Council, a comprehensive scheme was formulated.

The programme of construction arranged has now been completed and comprises boiler house installation,

potting and sterilising sheds, six large glasshouses and two smaller propagating glasshouses, the various connecting corridors being arranged to form conservatories. Ancillary areas of frameyard and fruit beds are included.

The installation presents many most interesting features. For the past hundred years or so traditional timber glasshouses of unchanging design have been built in this country on strictly conventional lines. During the same period other and quite different standardised methods of construction have gradually developed both in America and on the Continent.

The John Innes scheme contains examples not only of the traditional English timber glasshouse, but a duplicate of a modern American prefabricated glasshouse as well as an example of a Continental rigid frame glasshouse, clear of all internal trussing and bracing, such as is particularly favoured by the Dutch and Swiss growers. For the first time it should be possible to obtain an impartial knowledge of the relative advantages of these alternative types of glasshouse construction under practical conditions of operation.

Again shortage of timber has diverted the ideas of the commercial grower in new directions. Among the glasshouses are a number of examples of aluminium glasshouses. In one glasshouse designed by the Timber Development Association laminated ply arches have been used as the basis of the strong supporting structure. The inside of this glasshouse is illustrated in Figure 1.

The idea of collecting together examples of so many different forms of construction and arranging them in such a manner that not only could their behaviour over a lapse of time under ordinary practical conditions of operation be observed, but definite measurements of comparative

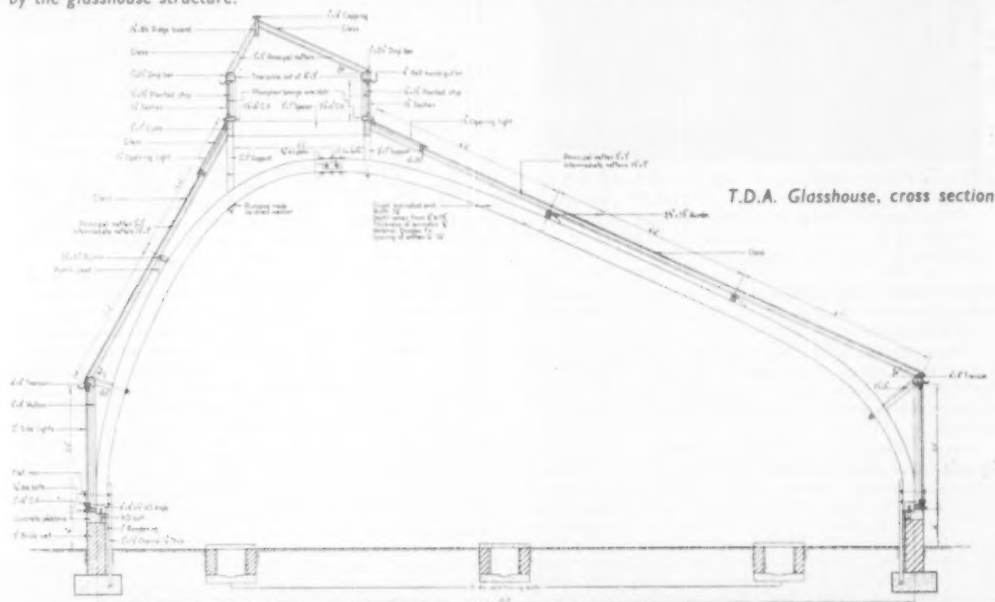


Fig. 1.



Fig. 2.

Fig. 1. Timber glasshouse designed by T.D.A., making use of bonded laminated ply frames. Fig. 2. Aluminium glasshouse of which the construction is based on the use of steel side posts and wire trusses. It is designed to give the very maximum amount of light in the early months of the year by reducing as much as possible the shielding of sunlight by the glasshouse structure.



T.D.A. Glasshouse, cross section



Fig. 3.



Fig. 4.

Fig. 3. L. The interior of a second aluminium glasshouse of almost identical construction to that shown in Fig. 2 but in which the roof is of uneven pitch having a long gentle slope only to the South. This glasshouse is sited in the North-South direction so that the sun travels along its length during the day. Fig. 4. R. The interior of a glasshouse designed to exactly duplicate a modern timber and steel American prefabricated glasshouse, the type most favoured by the commercial growing industry of that country.



Fig. 5. Power operation of roof ventilators. Each compressed air cylinder with its plunger operates a long range of roof ventilators ganged together. Control is by hand or alternatively is linked to a thermostat inside the glasshouse.

light efficiency, heat radiation losses and so on could be made, was due to Mr. P. J. Moss, of the Ministry of Agriculture.

The opportunity of obtaining exact experimental data as to the merits of the different kinds of construction should result in information being gained during the next few years of immense value to the ordinary commercial grower.

One of the great advances in modern growing technique is the realisation of the importance of light in determining the growth of crops. It is largely as the result of the work of W. J. C. Lawrence, the Curator of the John Innes Institution, that it is now known that the composition of the soil must be varied to suit increased light values and that under controlled conditions of increased light and corresponding soil composition quite spectacular improvements in weight and early maturing of crops is possible.

The desirability of proving and securing even more information on these points under practical growing conditions is an important factor underlying this scheme. For example, the aluminium glasshouse illustrated in Figure 2, due to wider panes of glass, smaller glazing bars and the very small shielding effect of the wire trusses, has a light efficiency some 40 per cent. greater than the traditional English timber glasshouse, and it will thus be possible to compare directly crop weights resulting from growth under these contrasted conditions.

It has been known for a long time that a considerable increase in light efficiency is gained by siting a glasshouse in a north-south direction instead of the conventional east-west aspect, and arranging the roof with a long slope to the south. This arrangement, although obviously useless in ridge and furrow glasshouses due to the shadows resulting from the shielding of one bay by the next, may be the ideal construction for single propagating glasshouses in which the maximum of light during the early critical growing months of the year is the overriding requirement.

In order that these ideas may be investigated prac-

tically under ordinary commercial conditions of operation, three of the John Innes glasshouses have been arranged in this manner. One of these glasshouses illustrated in Figure 3 is an exact duplicate in every way of the wire truss aluminium glasshouse shown in Figure 2. The only difference is aspect and shape of roof so that again it should be possible in the near future to obtain an exact evaluation of the gain accruing from this particular variation from conventional practice.

Figure 4 shows the interior of the glasshouse, which is an exact duplicate of a conventional American prefabricated commercial glasshouse.

In a short article such as this it is impossible to do more than make a brief mention of a few of the more detailed features of the scheme.

The design of the whole installation has centred round the idea of providing complete control of atmospheric conditions and of securing uniformity over long periods. As an example of detail all of the condensate water in each compartment of every glasshouse has been brought to a single point where a recording watermeter is installed. In conjunction with recording thermometers it will be possible for the first time with great accuracy to measure the whole heat radiation loss from glasshouses of each different type of construction, thus replacing the vague ideas of the past with an exact factual knowledge of this subject.

Three of the glasshouses, arranged as breeding houses, have been designed to be insect-proof and accordingly have forced draft ventilation, the air being admitted through and between the slab covers of the paths which are formed as hollow ducts. A fourth glasshouse is arranged with full air-conditioning, allowing the humidity of the ventilating air to be adjusted as required.

The heating system is by low pressure steam with vacuum condensate return and alternative fully automatic control is provided in every separate compartment, allowing an exact predetermined uniform temperature to be maintained night and day over long periods.

A number of different types of ventilators and ventilator control have been installed for the purpose of allowing data to be obtained regarding the comparative advantages of differing types. These include power-operated ventilators with the control linked alternatively with thermostats. These should allow the possibilities of automatic control of temperature during the summer months by linkage of the ventilators with thermostats to be investigated.

Fabric blinds are being installed over the roofs of all the glasshouses. In the case of one glasshouse these are arranged to be power-operated with solar thermostat automatic control so that the blinds are drawn only in full sunlight when there is danger of the heat of the sun burning the crops. If the sun goes behind a cloud the blinds immediately roll up.

The metal glasshouses were designed in the office of J. E. Temple, Whit.Sch., D.I.C., of South Kensington, S.W.10, the Consulting Engineer appointed by the Ministry of Agriculture to supervise the whole scheme.

The timber glasshouses were built by Messrs. Duncan Tucker Ltd., of Tottenham, the metal glasshouses by Messrs. Luxfer Ltd., of Harlesden. Heating was by Messrs. Burgess & Co. Ltd., of Bracknell, and the humidification plant was supplied by Messrs. Ozonair Ltd.

At the invitation of the Institution's Director, Dr. C. D. Darlington, F.R.S., the new installation was opened by the Rt. Hon. The Marquess of Salisbury, P.C., K.G., on June 2 last in the presence of some eight hundred guests representing every section of the horticultural industry.

#### DESIGNER: J. E. TEMPLE, CONSULTING ENGINEER.

Timber Glasshouses: Duncan Tucker (Tottenham) Ltd.

Metal Glasshouses: Luxfer Ltd.

Aluminium Alloy—Duralumin: James Booth & Co. Ltd.

Blinds—Fabric: Tidmarsh & Sons.

Concrete Benches: Kent Concrete Products.

Electrical Installation: A. J. Parker.

Heating: Burgess & Co. (Engineers) Ltd.

Humidification Plant: Ozonair Ltd.

Thermostats: Rheostatic Co. Ltd.



The Main Approach Entrance to the Exhibition, above, has been carried out in a clay medium. The tower pylons 25' 0" high are constructed in a red sandfaced brick in lime mortar in order to give high recoverability. Half brick wall construction being used throughout. Splayed wing walls in honeycomb construction enclose the paved approach and create an interesting perspective. The ends are faced in coloured faience tile. A hollow tile canopy extends over the entrance linking the two towers, and gives protection to the turnstiles. Beyond the entrance a vertical sword feature in prestressed concrete dramatically resolves the mass. A large paved area extends between the two entrances across the forecourt which is laid out with flower beds and borders and decorated with triple coloured venetian banners. The forecourt and entrances etc., are illuminated at night by concealed flood lights. Across the forecourt, behind the main entrance, is the entrance and foyer to the tented exhibition. This is constructed mainly in hard-board on a braced scaffolding frame. The floor pattern is designed in an inlaid rubber tile medium.

## LEEDS BUILDING WEEK

• Sept. 11 - 16, 1950 •

THE Leeds Building Week is more than a straightforward exhibition of building products. Here is a co-operative effort by the different sections of the Building Industry, under the sponsorship of the Ministry of Works, to demonstrate, not merely what each has to offer, but to present an overall picture of current trends and progress. The visitor—professional, commercial or lay—will find that the exhibition's different sections link together to tell a story of increasing mechanization. The transition from handcraft methods to machine methods is now well under way. Naturally it brings with it difficulties and some opposition. The need for information as to how old methods need to be and can be adapted to contemporary needs is therefore paramount.

By bringing this national information annually to different parts of the country, the Ministry of Works enables many, who could not normally find time to

travel, to study new developments on their own doorsteps. Moreover, these building weeks make possible an interchange of thought on a regional basis between members of the Industry, as well as providing a medium for enlightening the general public. For those who may regard mechanization as an expensive luxury, there is an opportunity of examining the exhibits and then getting advice or information on the best applications to suit their particular needs. The reverse may also be true, namely that visitors will have suggestions to offer, based on local knowledge, thus promoting the co-operation which is such a vital need if building is to be done with the necessary speed, efficiency and economy.

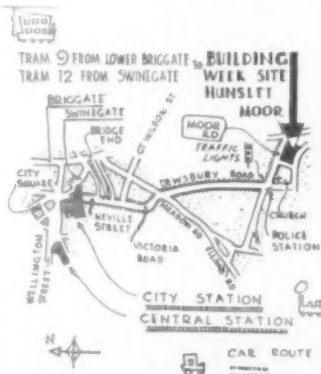
The Minister of Works, the Rt. Hon. R. R. Stokes, opens the exhibition on Monday, September 11. During the week there will be lectures on subjects of current interest to the Industry.

### HOW TO GET TO HUNSLET MOOR

This sketch map shows the position of Hunslet Moor, the site of "Building Week" Exhibition in relation to Leeds City Centre and the two railway stations, Central and City.

Nearest trams to the stations, running past the site are No. 9 (going to Dewsbury Road) from Lower Briggate and No. 12 (going to Middleton) from Swinegate. Trams run every 2 to 5 minutes.

The motor car route is from City Square via Neville Street, Victoria Road, Dewsbury Road to Moor Road.



Selected train services from London (King's Cross) to Leeds are:

Dep.	Arr.
*9.15 a.m.	1.8 p.m.
10.15 a.m.	2.19 p.m.
(2.45 p.m. on Tues., Wed., Thurs.)	
11.45 a.m.	3.24 p.m.
(pullman)	
From Leeds to King's Cross:	
Dep.	Arr.
8.25 a.m.	1.5 p.m.
*9.55 a.m.	1.55 p.m.
10.55 a.m.	2.42 p.m.
(pullman)	
*5.15 p.m.	9.46 p.m.

Selected services from Birmingham are:

Dep.	Arr.
8.2 a.m.	11.26 a.m.
10.10 a.m.	1.52 p.m.

From Leeds to Birmingham:

Dep.	Arr.
9.43 a.m.	1.6 p.m.
(ex. Sat.)	
10.1 a.m.	1.27 p.m.
5.18 p.m.	8.59 p.m.

\* Denotes restaurant car.







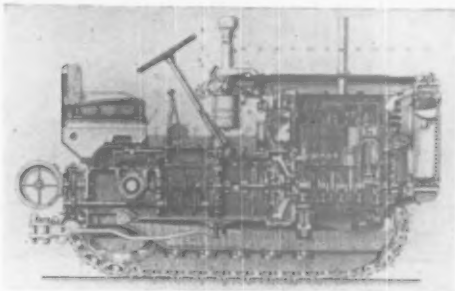


Fig. 1.



Fig. 2.

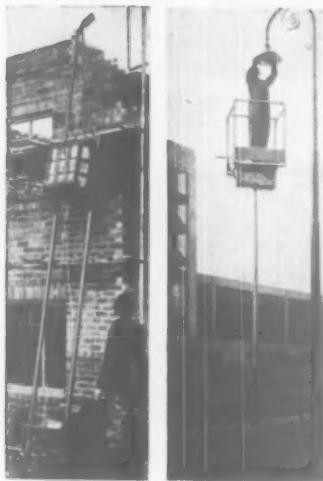


Fig. 3.



Fig. 4.



Fig. 5.

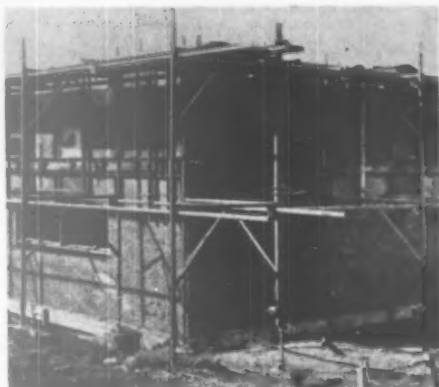


Fig. 6.



Fig. 7.



Fig. 8.

Figure 1 above, a section through a Fiat Tractor, seems to sum up many of the implications of mechanization—efficiency, power, accuracy. It indicates, too, perhaps that the machine, to work efficiently, needs care and understanding on the part of the operative. Given such care and understanding the machine, be it tractor, hoist, mixer, crane, dumper or any other mechanical aid to building can undoubtedly pay its initial cost—provided that it is selected for the right job and provided that work is properly organized and phased to include the use of machinery.

In the plant demonstration section of the Leeds Building Week, the range of machines is considerable. Some of the exhibits are described and illustrated in the following notes which also serve as a guide to the exhibition: the numbers with each firm's name referring to stand numbers on the plan.

F. Taylor & Sons (Manchester) Ltd. have Stand A1. On A2 The Agricultural Equipment and Contracting Company, who are main distributors in the Leeds area of the Ferguson System, are showing tractors, loaders, levellers and trailers in addition to a post-hole digger (Fig. 2), which was used to bore all holes for flagpoles on the site of the exhibition. William Randall & Co. (Horsham) Ltd., A3, are showing a variety of ladders.

In Section B Stand 1 is occupied by

Harper Mechanical Hods, B2 by Goughs of Helsingfors, and B3 by The Thwaites Agricultural Engineering Co. Ltd., who are showing their light-weight hoist. This is particularly suitable for use on traditional two-and-three storey buildings (Fig. 3). Fig. 4 shows the Beanstalk—a one-man operated hydraulic platform for high level work. This was illustrated in the Mosaics in *The Architect and Building News* of August 11, 1950, since when models are available with a working height of 30 ft. 0 in. There is also an electrically operated model: all models are the product of William Moss & Sons Ltd., mechanical developments division, B4. On Stand B5 are H. B. Raylor & Co. Ltd.

The Red Circle Ltd. have Stand 1 in Section C. William G. Search Ltd. are showing on C2 as well as F15 and M9. On C2 will be found winches and hoists

by the Ace Machinery Ltd. (Fig. 5). Chippendale (Engineers) Ltd. are on Stand C3 and Kwikform Ltd. on D.1. The latter firm are responsible for a giant tower feature in the centre of the exhibition and in addition they are showing the scaffolding and formwork shown in Figs. 6 and 7 respectively. The drawing of the Fiat tractor at the head of these notes should be compared with Fig. 8—this tractor, Model 52, can be seen on Stand D2—Mackay Industrial Equipment Ltd. — complete with hydraulic angledozer and 4 yard scraper. The draw-bar pull of this model is said to be in excess of 11,750 lbs.

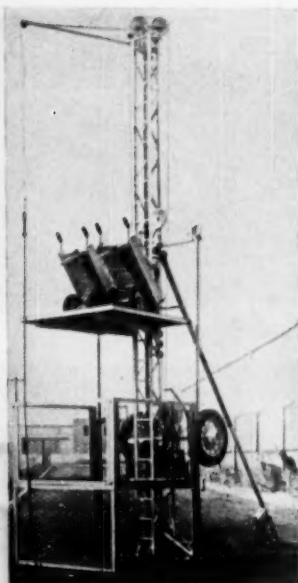


Fig. 9.

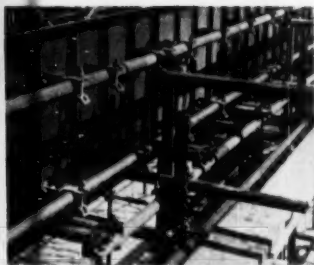


Fig. 10.



Fig. 11.



Fig. 12.

On the next stand D3 are *H. L. Reynolds Ltd.*

A portable hoist is illustrated in Fig. 9 and can be seen in operation on the stand of *Warry Patent Building Equipment Co. Ltd.*, D4. This hoist has several features, including automatic safety gates, which are best appreciated when the hoist is seen in action. The compact design of the motor unit and the simplicity and foolproofness of operation make a visit to this stand for a demonstration well worth while. *Acrow Engineers Ltd.* are on Stand D5 and on D6 *Mills Scaffold Co. Ltd.* are showing the patent shuttering and clip system illustrated in Fig. 10.

An improved bricklaying system is claimed by *J. H. Redman*, the inventor of the jig illustrated in Fig. 11. The picture shows special bricks, bevelled for easy jointing, being laid against a hand slide which separates the outer skin from the inner, leaving a cavity for mortar. The outer skin is laid against another slide which is raised on a horizontally moving ladder. No linebands or trowels are necessary.

*Winget Ltd.* have the first stand in Section E and are showing a new low priced vibrated slab and block making machine (Fig. 12). On Stands E2 are *Rapid Metal Development Ltd.*, whose exhibit will take the form of a number of columns of various sizes showing the type of formwork used, and how it is assembled. They will also be showing wall shuttering involving the use of vertical channels placed 4 ft. apart with 24 in. x 24 in. panels mounted between, and fixed and aligned with specially designed clamps, see Fig. 12a. A variety of assemblies can be built up with the four types of unit, i.e., panels, angles, channels and clamps. On Stand E3 are *The London and Midland Steel Scaffolding Co. Ltd.*

*Tutz Tractors Ltd.* are showing again, on Stand E4, their Skipdozer, a small fully tracked dumper with a skip capacity of 10 cu. ft. of wet concrete. Designed for manoeuvrability and accurate placing of concrete in narrow foundations, this machine is fitted with a dozer for back filling. Fig. 13. A 25 cwt. trailer is also offered.

An angled dozer for heavier work can be seen on the next Stand, E5. This is the *Montgomery Reid Bristol 20* on the Stand of *British and American Plant Repairs Ltd.*

*Acrow (Engineers) Ltd.* have a second stand at E6. *W. T. Palmer (Leicester)*

(Continued on page 291)



Fig. 12a.

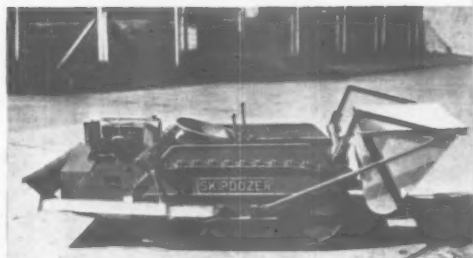


Fig. 13.

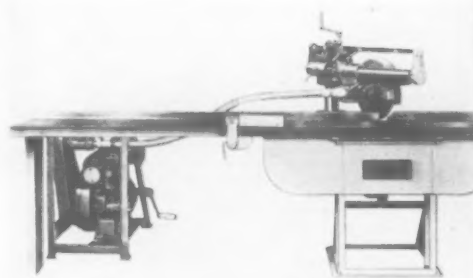
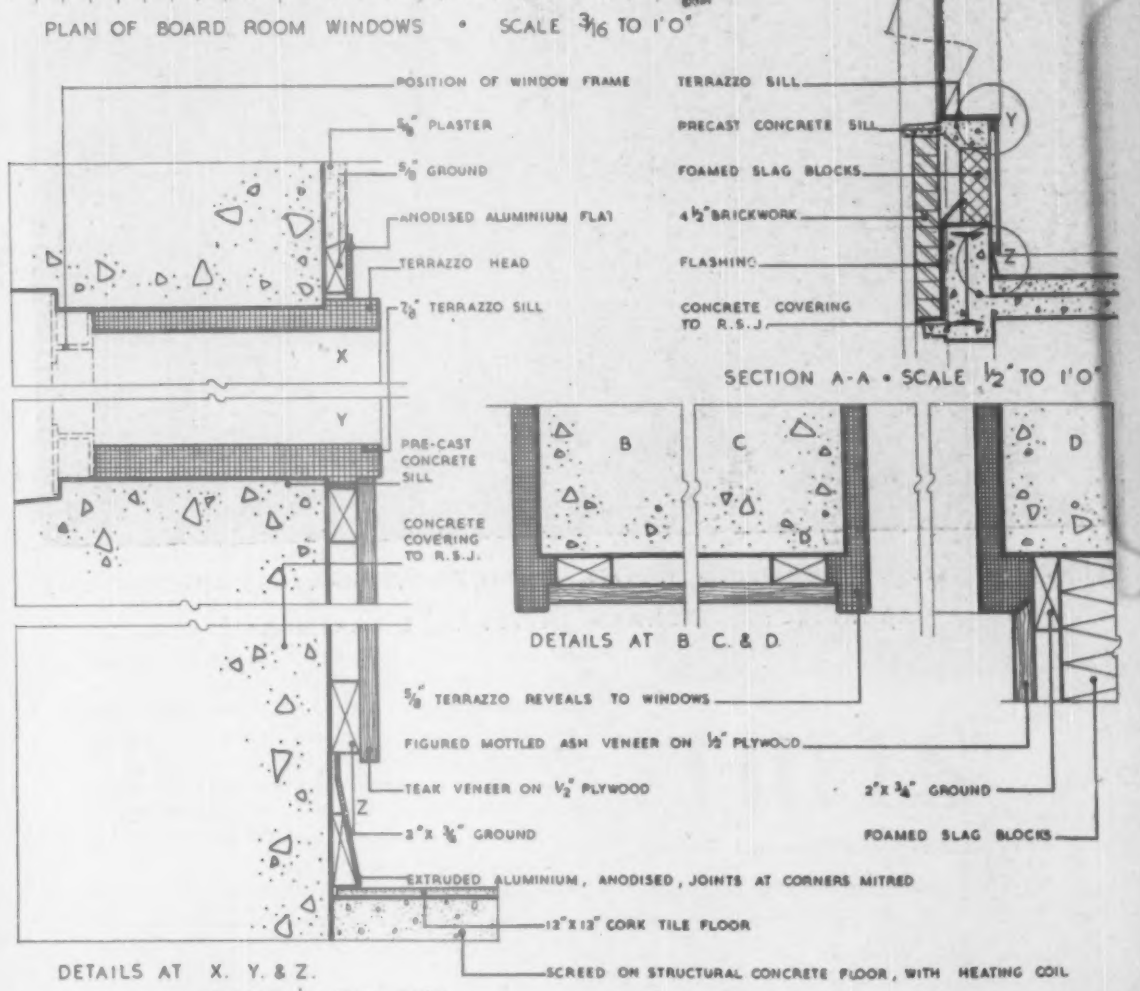
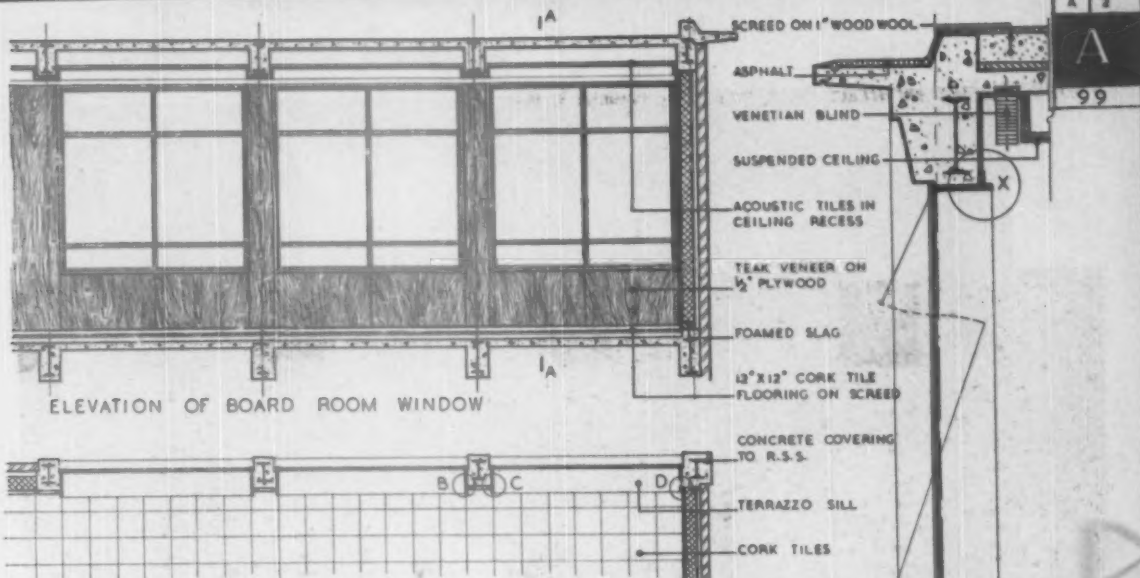


Fig. 13a.



Fig. 14.





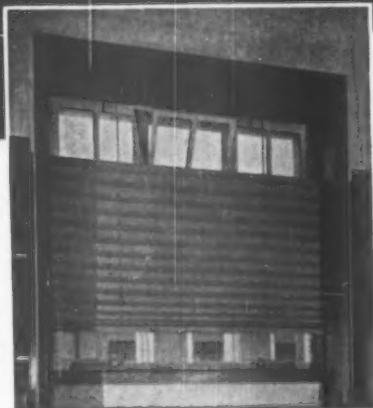
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Fig. 15

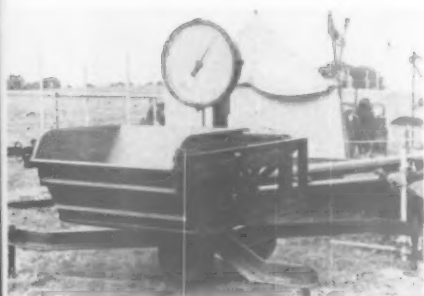


Fig. 16



Fig. 17

Ltd. are showing woodworking machinery on E8, including the self contained portable overhead cross cut saw primarily designed for quick and accurate cutting of all roofing timbers. See Fig. 13a.

On F1 are *Stephenson Developments (Huddersfield) Ltd.*, who have a new addition to their range of Sitmaster caravans. This new model shown in Fig. 14 is a mobile dormitory 12 ft. 0 in. x 7 ft. 0 in. x 6 ft. 6 in. for four men.

Then there are *R. Murray Ltd.*, F.2, *M. B. Wild & Co. Ltd.*, F.3, and *Sterling Foundry Specialities Ltd.*, F.4, and on F5 *Road Machines (Drayton) Ltd.* This latter firm are showing a self-propelled, mono-rail tipping waggon (Fig. 15). It has no driver and the claimed running cost is 7s. per day. In addition they are showing a  $\frac{1}{2}$  cu. yd. dumper and a single bucket-type swing weight-batcher designed to facilitate controlled-quality concrete production on small contracts and for pre-cast work, (Fig. 16).

Scaffolding (*Great Britain) Ltd.*, are here on F6. *The Flexible Drive & Tool Co. Ltd.*, at F7 are showing — amongst other flexible shaft driven tools — the three-speed immersion type portable concrete vibrating machine. A disc sawing machine and a plant maintenance outfit are other exhibits worth seeing. All machines can be supplied for petrol or electric drive. *H. R. Nash Ltd.*, are on F8.

Fig. 17 shows one of many applications of Ductube — the inflatable tube produced by *Wiggins Sankey Ltd.*, for preforming holes in concrete. Full particulars of the numerous uses of this device can be had at Stand F9. On Stand F10 are *Arthur Sanderson & Sons Ltd.*, while on F11 *B. G. Plant (Sales Agency) Ltd.*, are showing a three ton fully slewing mobile lorry mounted crane (Fig. 16) and a 2 ton hydraulically operated lorry-mounted crane in addition to other plant which includes the "Portec" portable hacksaw. This saw was recently described and illustrated in the *Architect & Building News* feature Mosaics, which describes and illustrates current developments and new products in the Industry.

A new surfacing process by *Pyrok Ltd.*, Stand F12, is applied in one mechanical operation. The mix comprises Portland Cement, exfoliated vermiculite, a lime plasticiser and water. Texture and colour can be varied and the material, it is claimed, may be sprayed to any thickness and will key to all normal materials. Fig. 19 shows method of application and resultant texture.



Fig. 18

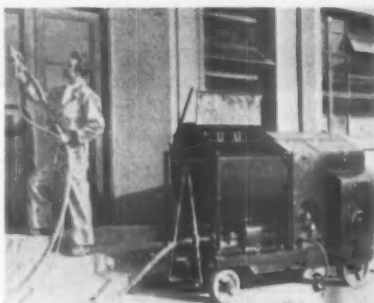


Fig. 19



Fig. 20



Fig. 21



Fig. 22



Fig. 23

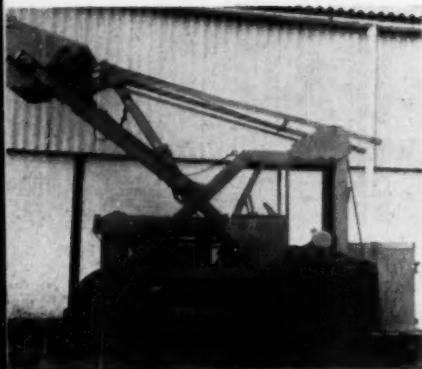


Fig. 24

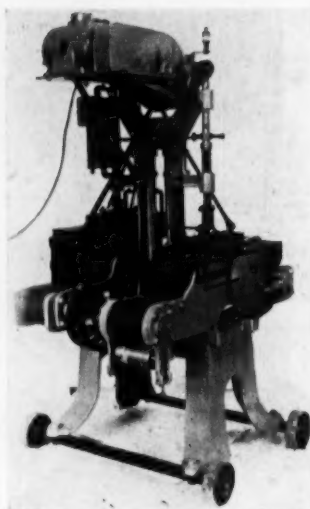


Fig. 26

The Leeds (Stanningley) branch of *George Cohen Sons & Co. Ltd.*, on Stand F13 are exhibiting their new "600" concrete mixer—standard and high speed trailer type, as well as a variety of cranes and the new *Bray Hydraloader* mounted on a *Fordson* tractor. The  $\frac{3}{4}$  cu. yard capacity bucket digs below ground and lifts to a maximum height of 14 ft. 9 in. Also shown is the "Moonraker" Mark II builders' power hoist for use with



Fig. 25

petrol, diesel or electric winches to give hoisting capacities from 10-20 cwt. A typical winch is shown in Fig. 20.

*Marshall Sons & Co. Ltd.*, F14 are showing a new diesel crawler tractor, illustrated in Fig. 21, manufactured by *John Fowler & Co. (Leeds) Ltd.*, and shown for the first time at the recent Royal Show, Oxford. The twin cylinder two-stroke diesel engine provides 72 h.p. at the draw-bar, complete with hydraulically operated angled dozer. Also very new is a wheeled diesel tractor. On the stand this tractor is fitted with a "Bray" hydraloader. Fig. 22 shows a 40 h.p. diesel crawler tractor manufactured by *John Fowler & Co. (Leeds) Ltd.*, associates of *Marshall & Sons*.

At F15, another of *William G. Search's* Stands, there are petrol centrifugal pumps—heavy duty and portable (Fig. 23), and a range of contractors' plant and builders' equipment. Here too is the *Chaseside*  $\frac{1}{2}$  cu. yard Hi-Lift loading shovel with latest fittings. (Fig. 24).

*H. L. Arnes & Co. (Engineering) Ltd.* are at F16 and *British Building and Engineering Appliances Ltd.* on F17.

Several firms are showing plant in the Ministry of Works tent in M section. Amongst these are *Sommerfelds Ltd.*, M5, *Dominion Rubber Co. Ltd.*, M6, and *Equipments Ltd.*, M7. On the latter stand the *Haydick* portable houser (Fig. 25) is demonstrated. This houser for grooving, square turning, cutting dentils, etc., is for use with standard voltages (or special to order) and contains a trigger switch in the handle and is fitted with a brake which enables the operator to stop the cutterhead almost instantaneously.

*Bentley & Garforth*, M7a, are exhibiting rustic brick making machines, one of which is illustrated in Fig. 26. These machines have not been shown before. Sample bricks are also shown. M8 is the Stand of *Baron Bros.* and at M9 *William G. Search Ltd.* are showing a variety of electric hand tools, hammers, drills, grinders, etc.

The exhibits of the *Central Tool & Equipment Co. Ltd.*, M10, are new on the market and include a high speed



Fig. 27



Fig. 28



Fig. 29

portable electric router (Fig. 27) with attachments for straight or circular grooving and for dovetail cutting (Fig. 28).

*G. Curtis Holt Ltd.* and *J. & H. Smith Ltd.* are at Stands M11 and M12 respectively, and *Murray & Bright (Builders Merchants) Ltd.* and *British Equipment Co. Ltd.* are at M36 and M37. At M38 is the *Unit Construction Co. Ltd.*, who are showing the portable site hut illustrated in Fig. 29.

## THE CINEMA

NOT the least important section of the Building Week is the Cinema. Three new films—recently previewed in London—will be shown for the first time in the North. They are: "The Task Before the Building Industry," "Watch Your Step," a film on safety precautions in building work, and "The Care and Maintenance of Plant." There will be daily displays of films to interest builders, operatives, architects, engineers and students.

### LECTURES IN THE CINEMA

MONDAY, 11th Sept., Addresses by members of the BUILDING INDUSTRY PRODUCTIVITY TEAM, 7.15 p.m.

TUESDAY, 12th Sept., THE WORKING PARTY REPORT, By Sir Hugh Beaver, 7.15 p.m.

WEDNESDAY, 13th Sept., APPRENTICESHIP, By Sir George Gater

THURSDAY, 14th Sept., BUILDING RESEARCH, By Doctor F. M. Lea.

ON FRIDAY, 15th SEPTEMBER, AT 7.15 p.m., there will be a discussion in the LEEDS CIVIC THEATRE entitled THE BUILDING INDUSTRY IN CONFERENCE. Early application for accommodation at the Lectures and Conference should be made to: THE BUILDING WEEK OFFICER, MINISTRY OF WORKS, GOVERNMENT BUILDINGS, LAWNSWOOD, LEEDS 6.

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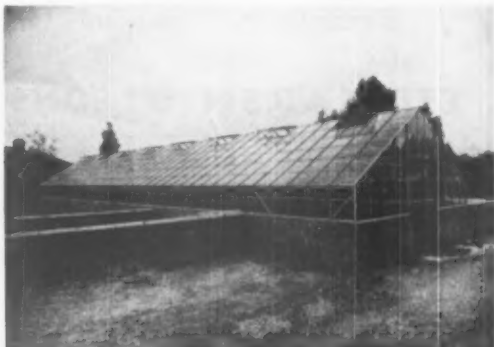
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Interior of Greenhouse No. 5 at the John Innes Institution (size of glass 24 in. wide and 48 in. long), showing framing of "Duralumin" bars measuring 2½ in. x 1½ in. The contractors were Messrs. Luxfer Ltd., Harlesden, London.



Exterior of 8 section 16 ft. 4 in. wide "Duralumin" plant house, supplied by Waldor to Willenhall U.D.C. (Memorial Park).



Exterior of "Waldor" greenhouses with "Duralumin" framing at Townhill Park Nurseries, Southampton. That nearest the camera is a .20 section 2 bay standard "Commercial" House, 155 ft. 2¾ in. long by 36 ft. 4¼ in. wide.



Interior of one of two blocks of "Waldor" "Duralumin" houses erected at Grande Maison Vineries, Guernsey. The makers of the "Waldor" greenhouses are the Waldor Tool & Gauge Co. Ltd., of Droitwich.

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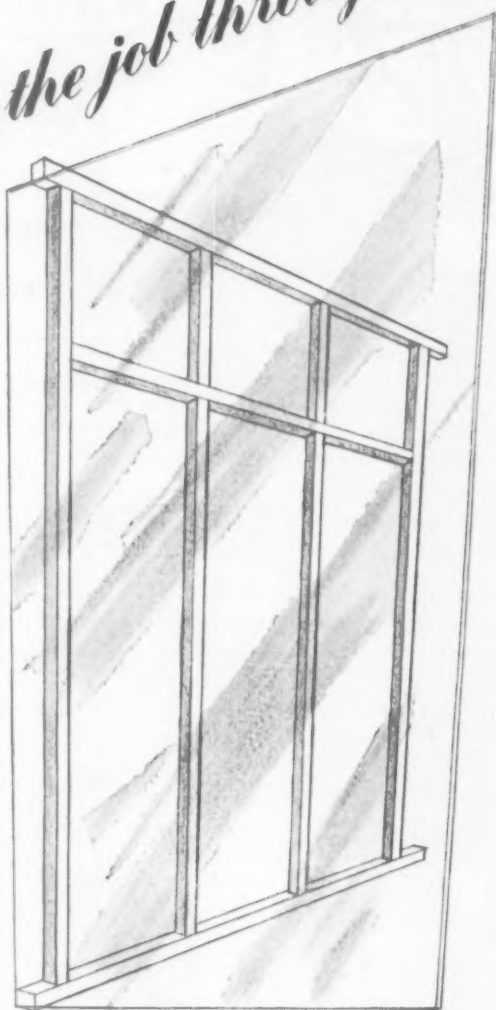
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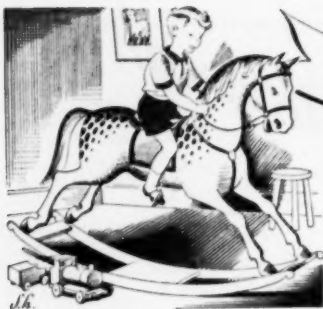
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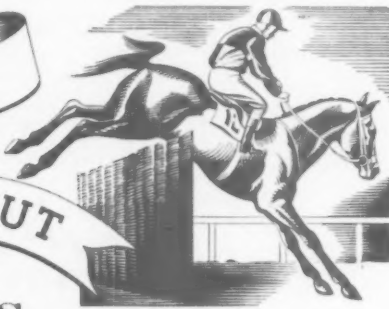
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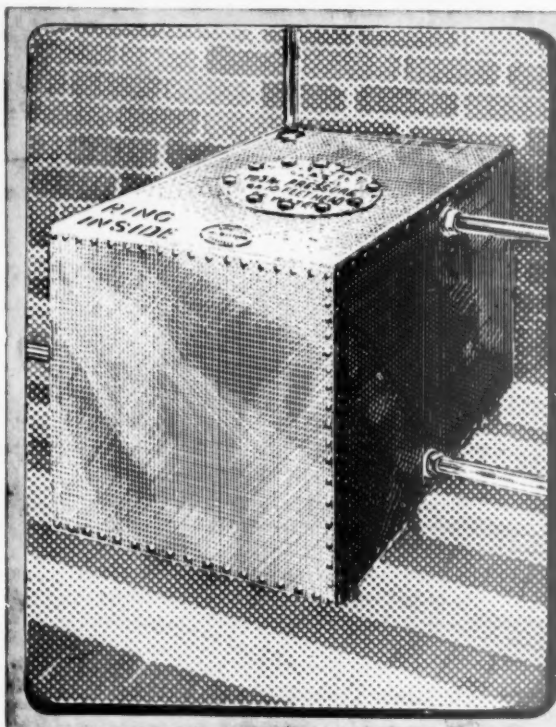
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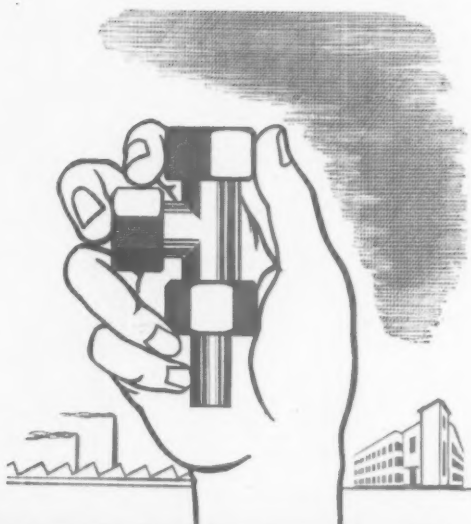
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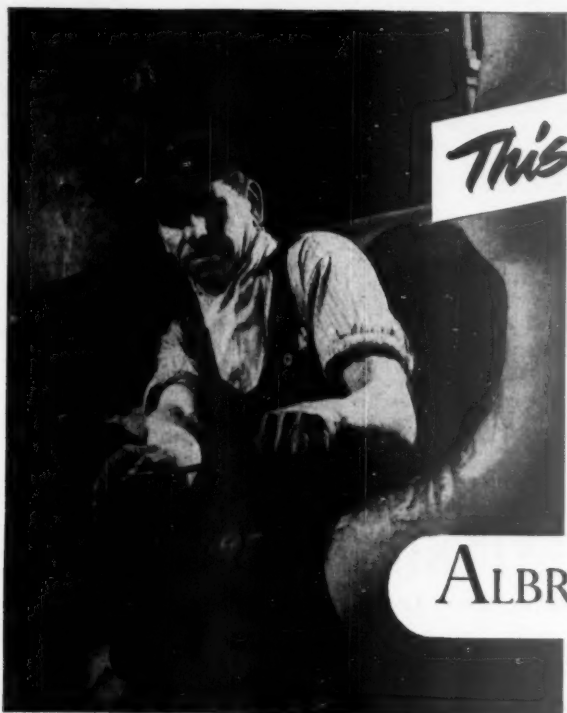
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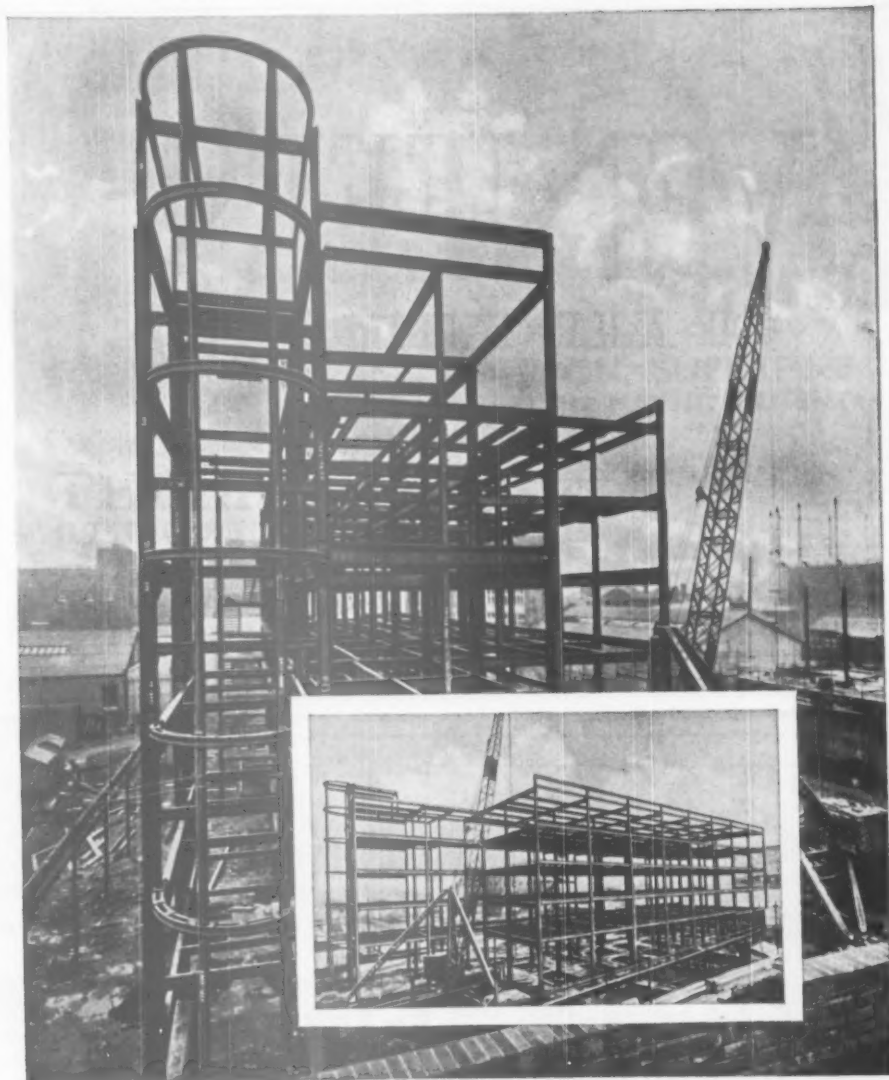
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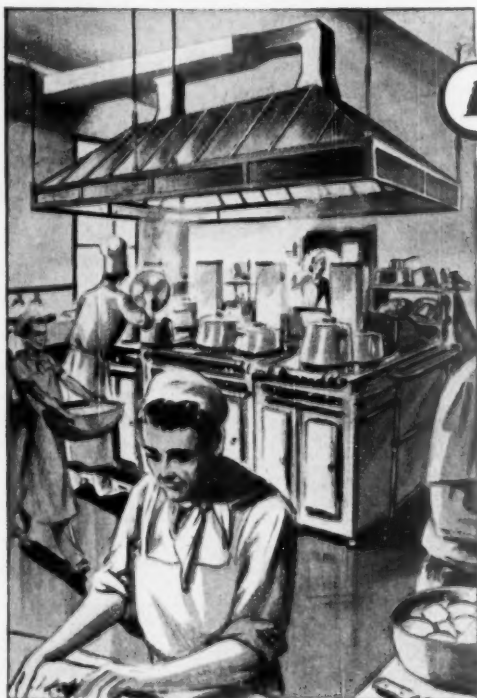
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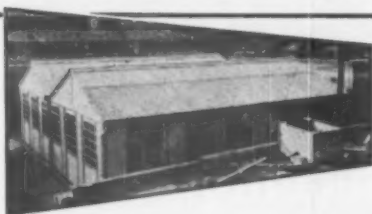
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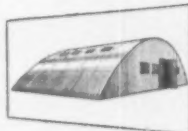
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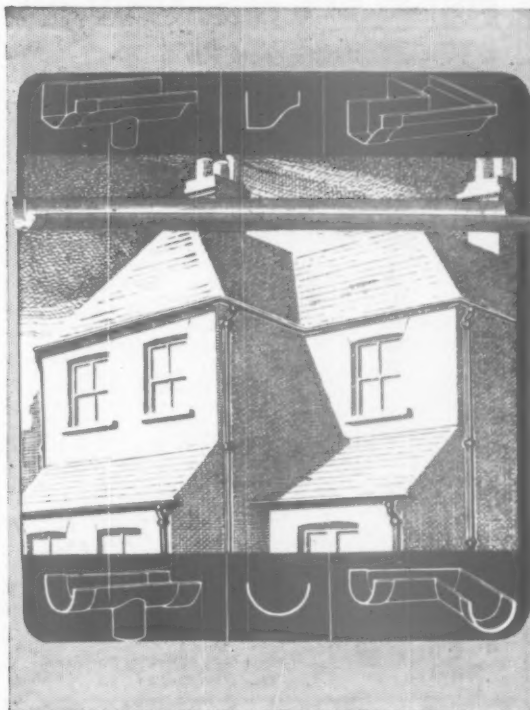
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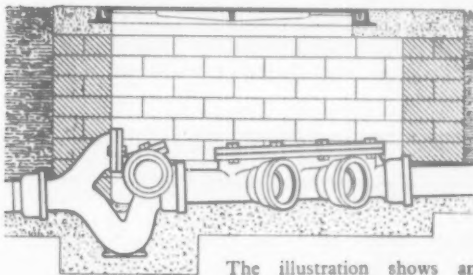
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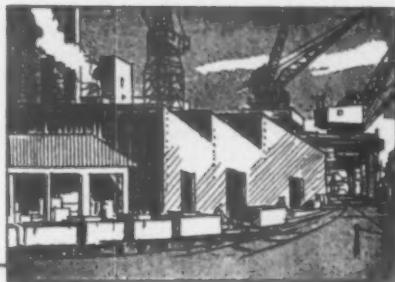
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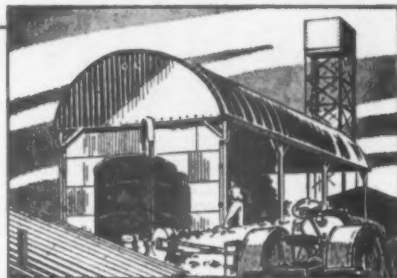
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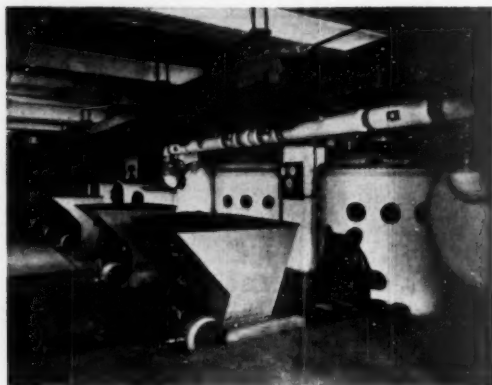
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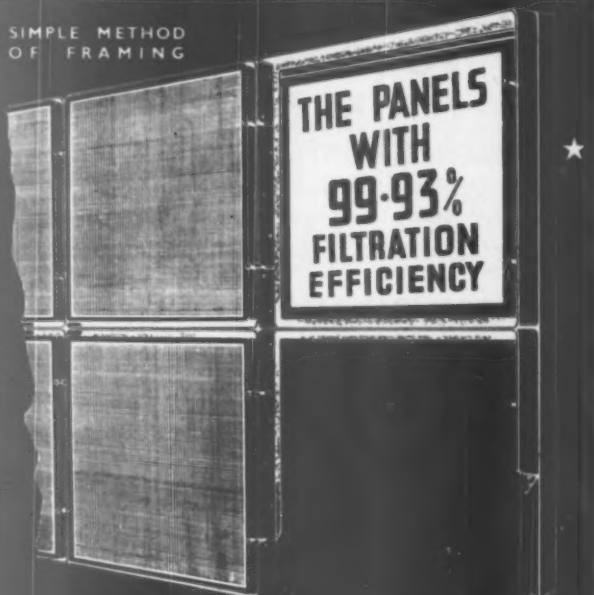
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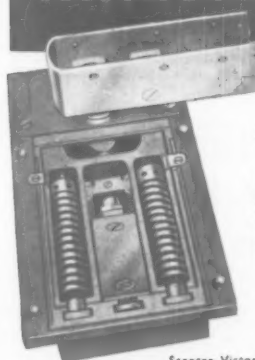


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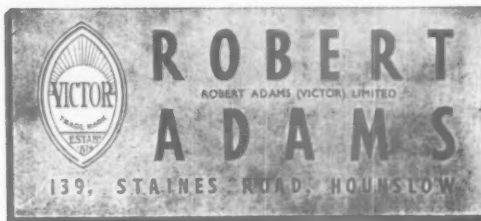
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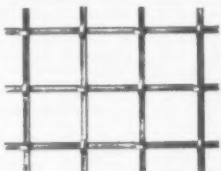
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Application forms obtainable from Ministry of Labour and National Service, Technical and Scientific Register (K), York House, Kingsway, W.C.2, quoting J210/50A (Architect) or J211/50A (Quantity Surveyor). [4767]

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W. F. J. CHURCH, Town Clerk.

Town Hall, Chiswick, W.4. [4764]

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## LONGBENTON URBAN DISTRICT COUNCIL.

## APPOINTMENT OF ARCHITECTURAL ASSISTANT.

**A**PPPLICATIONS are invited for the above appointment in the Engineer and Surveyor's Department from persons who have passed the Intermediate examination of the R.I.B.A. or its equivalent of one of the recognised Schools of Architecture. Applicants must have had experience in design and construction, particularly in relation to housing.

Salary will be in accordance with A.P.T. III (£450-495 per annum) or A.P.T. IV (£480-525 per annum) of the National Scales according to the experience of the successful candidate.

The appointment is terminable by one month's notice on either side and is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, endorsed "Architectural Assistant," stating age, qualifications, with full details of training and experience, and accompanied by copies of two recent testimonials, must be received by the undersigned not later than the 19th September, 1950.

Candidates must declare in writing whether they are related to any member or senior officer of the Council, and canvassing, directly or indirectly, will disqualify.

G. HARRISON, Clerk of the Council

Council Office,  
Forest Hall, Newcastle-upon-Tyne.  
31st August, 1950. [4769]

## HUNTINGDON COUNTY COUNCIL.

## COUNTY ARCHITECT'S DEPARTMENT.

**A**PPPLICATIONS are invited for the following appointments—

(a) CHIEF ARCHITECTURAL ASSISTANT, Grade VII A.P.T. Salary £615 x £25 to £710 per annum.

(b) SENIOR ARCHITECTURAL ASSISTANT, for which the salary will be within the scale of Grades V A.P.T. to VII A.P.T. (£520 to £710) according to qualifications and experience. Applicants for this position should be capable of specification writing and dealing with sub-contractors' and specialists' work and prices.

Both appointments will be subject to the provisions of the Local Government Superannuation Act, 1937.

Applications, stating age, qualifications and experience, should be submitted to S. J. Hands, A.R.I.B.A., County Architect, County Buildings, Huntingdon, by not later than Tuesday, 19th September, 1950, with copies of two recent testimonials or the names of two referees.

JOHN KELLY, Clerk of the County Council, County Buildings, Huntingdon.  
7th September, 1950. [4790]

## WAR DEPARTMENT.

**A**PPPLICATIONS are invited for the following vacancies in the Fortification and Works Directorate at Crowthorne, Surrey—

ASSISTANT CIVIL ENGINEER. Must be Corporate Member of Institution of Civil or Struct. Engineers, have specialised experience in design and construction of Steel Framed Buildings, and must be fully conversant with B.S. 449 (1948) and British Standard Codes of Practice for steelwork design. A knowledge of Reinforced Concrete Construction would be an advantage.

LEADING DRAUGHTSMAN (Civil Engineering). Applicants should have reached a technical standard of not less than Ordinary National Certificate and have practical experience in design and detailing of reinforced concrete structures, and be capable of preparing calculations, bending schedules, etc.

DRAUGHTSMAN (Mechanical). Must have reached a technical standard of not less than Ordinary National Certificate in Mechanical Engineering and have practical experience in this field. Candidates for all posts should be under 50 years of age.

Salaries for the posts are—  
Assistant Civil Engineer, £448-£720 per annum.  
Leading Draughtsman, £470-£595 per annum.  
Draughtsman, £283-£495 per annum.

Starting salary will be fixed according to age, qualifications and experience. Annual increases are payable, subject to satisfactory service.

The posts are temporary but most of them have long-term possibilities and open competitions are held periodically to fill established posts.

The work is varied and interesting and good canton facilities exist.

Apply in writing, stating age, nationality and full details of qualifications and experience, to the War Office (C.S.A.), Room 804, Hotel Victoria, Northumberland Avenue, London, W.C.2. [4791]

## GOVERNMENT OF NORTHERN IRELAND.

MINISTRY OF FINANCE.  
CHIEF ARCHITECT'S BRANCH.

**A**PPPLICATIONS are invited for ASSISTANT ARCHITECT posts in the Ministry of Finance. Subject to a probationary period of two years, the posts are permanent and pensionable.

Remuneration: The scale is £500 x £25 - £750. The entry point to this scale depends on age, viz. £500 at age 36 plus £25 for each year above that age. The upper entry point is, however, subject to a limit of £650 per annum.

Qualifications: Candidates must be Registered Architects by examination. In addition, they must have had at least two years' experience in an Architect's Office or Department in the preparation of working drawings for new buildings.

Preference will be given to candidates who have served in H.M. Forces in war-time, provided that such candidates can, or within a reasonable time will be able to, fill the posts efficiently.

Closing date for receipt of applications: Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast, to whom they must be returned with copies of two recent testimonials, no as to reach him not later than the 2nd October, 1950. [4792]



## HEMEL HEMPSTEAD DEVELOPMENT CORPORATION.

## ARCHITECT'S DEPARTMENT.

**A**PPPLICATIONS are invited for the appointment of a **SENIOR ASSISTANT ARCHITECT**, salary in the scale £550 x £100 x £750 according to age and experience. Applicants must be Associates of the R.I.B.A. and have had at least 5 years' experience in the profession, must be good designers and have had general experience in domestic and industrial design.

The appointment will be subject to the Development Corporation's staff rules and conditions of service (which are broadly similar to the Local Government Officers' "Charter"), in particular to one month's notice of termination on either side.

Contributory superannuation with an opportunity of entering or continuing in Local Government Superannuation Fund will be provided.

Housing accommodation will be available to married applicants if desired.

Applications, giving full particulars of age, qualifications and experience, together with the names of two persons to whom reference may be made, and endorsed "Senior Assistant Architect," should be addressed to the undersigned, to reach him not later than Friday, 22nd September, 1950.

W. O. HART, General Manager.  
Hemel Hempstead Development Corporation,  
Westbrook Hay, Hemel Hempstead, Herts.  
[4799]

## COUNTY BOROUGH OF GRIMSBY.

## BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

## APPOINTMENT OF AN ASSISTANT QUANTITY SURVEYOR.

**A**PPPLICATIONS are invited for the appointment of an **ASSISTANT QUANTITY SURVEYOR** in the Architectural Section of the above Department on the salary scale of A.P.T. Grade II (£420 rising to £465 per annum).

The appointment is subject to the Conditions of Service of the National Joint Council, terminable by one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

Forms of application can be obtained from and when completed must be returned to the undersigned, accompanied by copies of two recent testimonials, so as to reach my office not later than Saturday morning, the 23rd September, 1950.

J. V. OLDFIELD,  
Borough Engineer and Surveyor,  
Municipal Offices,  
Town Hall Square, Grimsby.  
September, 1950. [4797]

## BOROUGH OF BEDDINGTON AND WALLINGTON.

## APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

**A**PPPLICATIONS are invited for the appointment of **CHIEF ARCHITECTURAL ASSISTANT** at a salary in accordance with A.P.T. Grades Va-VI of the National Scales (£250 x £20 x £25 x £600) plus London Weighting. Applicants should hold the qualification of the Final examination of the R.I.B.A. or its equivalent. Experience is required in municipal housing schemes, flats, adaptations, estimating and supervision of works.

The appointment is subject to the provisions of the National Scheme and to one month's notice on either side.

Housing accommodation will be provided for the successful candidate.

Forms of application, which make provision for supplying the names of two referees, may be obtained from me, and on completion should be sent in envelopes endorsed "Chief Architectural Assistant," to reach me not later than Thursday, 28th September, 1950.

Canvassing, directly or indirectly, will disqualify.  
A. B. BATEMAN, Town Clerk,  
Town Hall, Wallington, Surrey.  
8th September, 1950. [4791]

**A**PPPLICATIONS are invited for the appointment of **BUILDING SURVEYOR** to take charge of property maintenance. Applicants should be qualified, capable of drawing up specifications, supervising decorations and repairs to showrooms, offices and dwelling houses. Salary Grade A.P.T. X, £600-£700 per annum.—Applications, stating age, qualifications and particulars of training and experience, should be addressed to the Divisional Engineer, Eastern Gas Board, Watford Division, Radiant House, Clarendon Road, Watford, Herts. [4780]

## BOROUGH OF HORNSEY.

## ENGINEER AND SURVEYOR'S DEPARTMENT.

## APPOINTMENT OF ARCHITECTURAL ASSISTANT.

**A**PPPLICATIONS are invited for the following temporary appointment—

**ARCHITECTURAL ASSISTANT**, Grade V (A.P.T. Division of the National Scale) at a salary of £520-£570 per annum or Grade VI (A.P.T. Division of the National Scale) at a salary of £595-£660 per annum, plus London Weighting Allowance of £30 per annum in both instances. Grade according to experience.

Candidates should preferably be Associate Members of the Royal Institute of British Architects.

Applications, stating age, present and previous appointments, technical training, qualifications, experience, etc., together with the names of three referees, must be delivered to Mr. J. H. Melville Richards, A.M.I.C.E., M.I.Mun.E., Borough Engineer and Surveyor, Hornsey Town Hall, N.8, not later than the 18th September, 1950.

Candidates must disclose in writing whether, to their knowledge, they are related to any Member or Officer of the Council.

Canvassing, either directly or indirectly, will disqualify.

H. BEDALE, Town Clerk.  
Town Hall, Hornsey, N.8.  
28th August, 1950. [4787]

## LONDON COUNTY COUNCIL.

**A**PPPLICATIONS are invited for positions of **ARCHITECTURAL ASSISTANT** (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Act, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats) and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816) [4618]

## BOROUGH OF GUILDFORD.

## APPOINTMENT OF ARCHITECTURAL ASSISTANT.

**A**PPPLICATIONS are invited for the appointment of **ARCHITECTURAL ASSISTANT** in the Borough Engineer's Department at a salary in accordance with Grade A.P.T. IV of the National Scheme of Conditions of Service (£400-£525).

Applicants should have had good experience on general architectural work including housing development. Preference will be given to applicants holding an appropriate professional qualification. The appointment will be terminated by one month's notice in writing on either side, and subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and experience, must be delivered, with copies of two recent testimonials, to me not later than Thursday, September 21st, 1950.

Living accommodation will be available for the successful candidate. Applicants must state whether they are related to any member of the Authority, or the holder of any senior office under the Authority. Canvassing of members of the Authority, either directly or indirectly, will disqualify the candidate.

HERBERT C. WELLER, Town Clerk.  
Municipal Offices, Guildford.  
4th September, 1950. [4600]

**AIR MINISTRY** have vacancies for **DESIGNERS/DRAFTSMEN** in the Design Branch of the Works Department for high class work in the following fields: Architecture, Drainage and Water Supply, Land Survey. The work includes designs for London Airport. Salaries are on ranges up to £750. Starting pay according to age and qualifications.—Applications, stating age, qualifications, previous appointments and salary required should be sent to Air Ministry, S.2(b), Cornwall House, London, S.E.1. It is regretted that applications of candidates not called for interview cannot be acknowledged. [4753]

## ARCHITECTURAL APPOINTMENTS VACANT.

**ASSISTANT Architect** required. Salary £150 to £750 according to qualifications.—Crofton Dalzell, A.M.I.S.E., Architect and Quantity Surveyor, Coleraine, Northern Ireland. [4795]

**ARCHITECTURAL Assistants** with experience in steel framed buildings required to work on 402 Government office buildings. Senior and junior graded Assistants will be selected on ability and experience rather than salary required.—Write, stating age, experience and salary, to Louis de Sassons, A.R.A., & Partners, 1 Park Square West, London, N.W.1. [4796]

**LONDON Firm of Architects** have vacancies for **Junior Assistants**. Progressive positions for competent applicants. Salary £350-£550 per annum. Office experience essential. Five-day week.—Telephone Museum 0883 for appointment. [4755]

**HENING & CHITTY, F.R.I.B.A.** invite application by experienced Assistant (salary £750 to £850).—Write details, 20 Goswami Street, W.C.1. [4784]

**SENIOR Architectural Assistant** required for factory and hospital work in Liverpool. Kindly write, stating age, experience, salary required.—Box 6207, The Architect and Building News. [4781]

## SITUATIONS VACANT.

**ARCHITECTURAL Metal Workers** require a Designer-Draftsman of considerable merit. Top salaried position for skilled man.—Apply The Morris Singer Company, Hope House, 61 Peter Street, Westminster, S.W.1. [4095]

**ARCHITECTURAL ASSISTANT** required immediately in the Works Department of the London Co-operative Society Ltd. Applicants should preferably have had experience in the layout and structural design of commercial and industrial buildings. This post will be subject to medical examination, T.U. membership, the Society's form of engagement, and after a short probationary period the successful applicant will be required to participate in the Society's superannuation scheme. Salary £450 per annum inclusive.—Applications in writing, stating age, technical qualifications, full details of experience in chronological order and positions held, to the Staff Manager (A. & B.N.), 54 Maryland Street, Stratford, E.15. [4786]

**A**PPPLICATIONS are invited from a Senior Architectural Draughtsman with experience of industrial building work. Age 25/35. Five-day week and pension scheme.—Please apply in writing, giving details of age, experience and salary required, to Humphreys & Glasgow Limited, 22 Carlisle Place, S.W.1. [4798]

**BRACKNELL DEVELOPMENT CORPORATION** (Bracknell, Berks.) require a **Model Maker** on the Chief Architect's Staff. Applicants must have had a good and varied experience in architectural and topographical model making and be able to translate drawings and develop all types of reproductions. Precision work will often be necessary, good draughtsmanship is essential and architectural training will be considered an advantage. The post will be temporary in the first place, but there is the possibility that after a period of satisfactory service the post may be permanent and superannuable.—Applications giving full particulars of the candidate's age, education and experience, salary required and the names of two persons to whom reference can be made, must reach the General Manager, Bracknell Development Corporation, Farley Hall, Binfield, Bracknell, Berks, on or before 9th September, 1950, marking the envelope "Model Maker." [4765]

**CHIEF ARCHITECTURAL DRAUGHTSMAN** required to take charge of Chief Staff Architect's Drawing Office at Watlington, near Romford. Sound knowledge of industrial building construction is essential. Five-day working week and pension scheme are in operation. Staff canteen.—Applications, stating age, experience and salary required, to Chief Staff Architect, Ilford Limited, Romford, Essex. [4785]

**CAPABLE Assistant**, intermediate standard, for varied work.—Apply MIT, 4477. [4779]

**EXPERIENCED Quantity Surveyor, R.I.C.S.** Final standard required for head of Quantity Surveying Department. Salary £700 to £1,000 according to qualifications.—Crofton Dalzell, A.M.I.S.E., Quantity Surveyor, Coleraine, Northern Ireland. [4794]

**LEADING Correspondence School** in North Midlands requires **Architecture and Building Tutor**. A.R.I.B.A. or equivalent qualification essential.—Write, giving full details of age, experience and qualifications, to Box 6208, The Architect and Building News. [4783]

## CONTRACTS

## BOROUGH OF WALTHAMSTOW.

## ERECTION OF FLATS.

**TENDERS** are invited for the erection of **TWENTY ONE-BEDROOM FLATS** in two storeys, together with a "Common Room," at a site at Bulla Farm, Billet Road, Walthamstow, E.17.

Applications to tender should be made to the Borough Architect, Town Hall, Walthamstow, E.17, and must be accompanied by a deposit of £2 2s. 0d., returnable on receipt of a bona-fide tender and the return of all documents issued.

The Bills of Quantities and Forms of Tender will be forwarded as soon as possible after the 15th September, and application should be made not later than this date.

Sealed tenders are to be delivered to the undersigned in the endorsed envelope provided, by a date to be stated on the tender form. Plans and Conditions of Contract will be available for inspection at the office of the Borough Architect between the hours of 9 a.m. and 5 p.m. from Monday to Friday, and from 9 a.m. to 12 noon on Saturday after the date aforesaid for the issue of the Bills of Quantities.

The Council do not bind themselves to accept the lowest or any tender.

G. A. BLAKELEY, Town Clerk. [4782]

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**THE** Five Years' Course qualifies for exemption from the Final Examination for Associateship of the R.I.B.A., and for registration under the Architects (Registration) Act 1913-1938. Students who complete satisfactorily the first Three Years of the course are granted exemption from the Intermediate Examination of the R.I.B.A.

School year begins 25th September, 1950.  
Fees—£25 per annum.

Students under the age of 18 may be admitted free.

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Fees from 25s. to 65s. per course.

Special Design classes and lectures on the Theory of Structures, Hygiene, Materials, Specifications, and Professional Practice in preparation for the Final Examination of the R.I.B.A.

**ENTRY TO THE SCHOOLS.** Incoming day students are interviewed by appointment. Intending evening students will be interviewed from 5.30-7.30 p.m. on 18th and 19th September, or on any subsequent Monday evening at 6.30 o'clock.  
Prospectus put free on application.  
Telephone North 1686. [4769]

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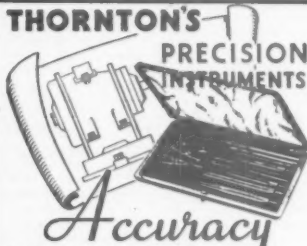
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